



## SEQUENCE LISTING

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#9  
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## (1) GENERAL INFORMATION:

- (i) APPLICANT: Lonberg, Nils  
Kay, Robert M.
- (ii) TITLE OF INVENTION: Transgenic Non-Human Animals for  
Producing Heterologous Antibodies
- (iii) NUMBER OF SEQUENCES: 417
- (iv) CORRESPONDENCE ADDRESS:
  - (A) ADDRESSEE: Townsend and Townsend and Crew LLP
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  - (C) CITY: San Francisco
  - (D) STATE: California
  - (E) COUNTRY: USA
  - (F) ZIP: 94111-3834
- (v) COMPUTER READABLE FORM:
  - (A) MEDIUM TYPE: Floppy disk
  - (B) COMPUTER: IBM PC compatible
  - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
  - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 09/724,965
  - (B) FILING DATE: 28-NOV-2000
  - (C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08/758,417
  - (B) FILING DATE: 02-DEC-1996
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08/728,463
  - (B) FILING DATE: 10-OCT-1996
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08/544,404
  - (B) FILING DATE: 10-OCT-1995
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08/352,322
  - (B) FILING DATE: 07-DEC-1994
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08/209,741
  - (B) FILING DATE: 09-MAR-1994
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08/165,699
  - (B) FILING DATE: 10-DEC-1993
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08/161,739
  - (B) FILING DATE: 03-DEC-1993

- (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: US 08/155,301
    - (B) FILING DATE: 18-NOV-1993
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: US 08/096,762
    - (B) FILING DATE: 22-JUL-1993
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: US 08/053,131
    - (B) FILING DATE: 26-APR-1993
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: US 07/990,860
    - (B) FILING DATE: 16-DEC-1992
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: US 07/904,068
    - (B) FILING DATE: 23-JUN-1992
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: US 07/853,408
    - (B) FILING DATE: 18-MAR-1992
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: US 07/810,279
    - (B) FILING DATE: 17-DEC-1991
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: US 07/575,962
    - (B) FILING DATE: 31-AUG-1990
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: US 07/574,748
    - (B) FILING DATE: 29-AUG-1990
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: WO PCT/US92/10983
    - (B) FILING DATE: 29-AUG-1991
  - (vii) PRIOR APPLICATION DATA:
    - (A) APPLICATION NUMBER: WO PCT/US91/06185
    - (B) FILING DATE: 29-AUG-1991
  - (viii) ATTORNEY/AGENT INFORMATION:
    - (A) NAME: Serafini, Andrew T.
    - (B) REGISTRATION NUMBER: 41,303
    - (C) REFERENCE/DOCKET NUMBER: 014643-009030US
  - (ix) TELECOMMUNICATION INFORMATION:
    - (A) TELEPHONE: (415) 576-0200
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- (2) INFORMATION FOR SEQ ID NO:1:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 10 base pairs
    - (B) TYPE: nucleic acid
    - (C) STRANDEDNESS: single
    - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

CTAADTGGGG

10

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Asp Ala Phe Asp Ile  
1 5

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Asp Tyr Phe Asp Tyr  
1 5

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Gly Ala Phe Asp Ile  
1 5

## (2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 4 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Lys Glu Arg Val  
1

## (2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 4 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Asn Asp Ser Val  
1

## (2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: RNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

AAAGAAAGAG UU

12

## (2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: RNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

AACGACAGCG UU

12

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

GAGCTGAGCT GGGGT

15

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

GAGCTGAGCT GAGCTGGGGT

20

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 25 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

GAGCTGAGCT GAGCTGAGCT GGGGT

25

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 30 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

GAGCTGAGCT GAGCTGAGCT GAGCTGGGGT

30

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GGGGT

35

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 40 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGGGGT

40

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 45 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GGGGT

45

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 50 base pairs
- (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGGGGT 50

(2) INFORMATION FOR SEQ ID NO:17:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 55 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GGGGT 55

(2) INFORMATION FOR SEQ ID NO:18:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 60 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGGGGT 60

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 65 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT 60  
GGGGT 65

## (2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 70 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT 60

GAGCTGGGGT 70

## (2) INFORMATION FOR SEQ ID NO:21:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 75 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT 60

GAGCTGAGCT GGGGT 75

## (2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 80 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT 60

GAGCTGAGCT GAGCTGGGGT 80

## (2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 85 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear



(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

|   |    |
|---|----|
| GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT | 60 |
| GAGCTGAGCT GAGCTGAGCT GGGGT                                       | 85 |

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 90 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

|   |    |
|---|----|
| GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT GAGCTGAGCT | 60 |
| GAGCTGAGCT GAGCTGAGCT GAGCTGGGGT                                  | 90 |

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

|               |    |
|---------------|----|
| AATTGCGGCC GC | 12 |
|---------------|----|

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 45 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

|   |    |
|---|----|
| CTTGAGCCCG CCTAATGAGC GGGCTTTTTT TTGCATACTG CGGCC | 45 |
|---|----|

## (2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 51 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

GCAATGGCCT GGATCCATGG CGCGCTAGCA TCGATATCTA GAGCTCGAGC A

51

## (2) INFORMATION FOR SEQ ID NO:28:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 51 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

TGCAGATCTG AATTCCCGGG TACCAAGCTT ACGCGTACTA GTGCGGCCGC T

51

## (2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 45 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

AATTAGCGGC CGCACTAGTA CGCGTAAGCT TGGTACCCGG GAATT

45

## (2) INFORMATION FOR SEQ ID NO:30:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 51 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

CAGATCTGCA TGCTCGAGCT CTAGATATCG ATGCTAGCGC GCCATGGATC C

51

(2) INFORMATION FOR SEQ ID NO:31:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 51 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

AGGCCATTGC GGCCGCAGTA TGCAAAAAAA AGCCCGCTCA TTAGGCGGGC T

51

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 19 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

CGCGTGGCCG CAATGGCCA

19

(2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 19 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

CTAGTGGCCA TTGCGGCCA

19

(2) INFORMATION FOR SEQ ID NO:34:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 36 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

CAGGATCCAG ATATCAGTAC CTGAAACAGG GCTTGC

36

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

GAGCATGCAC AGGACCTGGA GCACACACAG CCTTCC

36

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

GGACTGTGTC CCTGTGTGAT GCTTTTGATG TCTGGGGCCA AG

42

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

CACCAAGTTG ACCTGCCTGG TCACAGACCT GACCACCTAT GA

42

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 base pairs
- (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

CCTGTGGACC ACCGCCTCCA CCTTCATCGT CCTCTTCCTC CT

42

(2) INFORMATION FOR SEQ ID NO:39:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

TGAGCCACGA AGACCCTGAG GTCAAGTTCA ACTGGTACGT GG

42

(2) INFORMATION FOR SEQ ID NO:40:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

TGGTATTACT ATGGTTCGGG GAGTTATTAT AACCACAGTG TC

42

(2) INFORMATION FOR SEQ ID NO:41:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

GCCTGAAATG GAGCCTCAGG GCACAGTGGG CACGGACACT GT

42

(2) INFORMATION FOR SEQ ID NO:42:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

GCAGGGAGGA CATGTTTAGG ATCTGAGGCC GCACCTGACA CC

42

(2) INFORMATION FOR SEQ ID NO:43:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

GATCCTGGTT TAGTTAAAGA GGATTTTATT CACCCCTGTG TC

42

(2) INFORMATION FOR SEQ ID NO:44:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

GATCCAAGCA GT

12

(2) INFORMATION FOR SEQ ID NO:45:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

CTAGACTGCT TG

12

## (2) INFORMATION FOR SEQ ID NO:46:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

CGCGTCGAAC TA

12

## (2) INFORMATION FOR SEQ ID NO:47:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

AGCTTAGTTC GA

12

## (2) INFORMATION FOR SEQ ID NO:48:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

GAATGGGAGT GAGGCTCTCT CATACCCTAT TCAGAACTGA CT

42

## (2) INFORMATION FOR SEQ ID NO:49:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

GAACTGTGGC TGCACCATCT GTCTTCATCT TCCCGCCATC TG

42

(2) INFORMATION FOR SEQ ID NO:50:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 36 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

GAGGTACACT GACATACTGG CATGCCCCCC CCCCCC

36

(2) INFORMATION FOR SEQ ID NO:51:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 60 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

GTACGCCATA TCAGCTGGAT GAAGTCATCA GATGGCGGGA AGATGAAGAC AGATGGTGCA

60

(2) INFORMATION FOR SEQ ID NO:52:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 36 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

TCATCAGATG GCGGGAAGAT GAAGACAGAT GGTGCA

36

(2) INFORMATION FOR SEQ ID NO:53:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 24 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear



(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

GTACGCCATA TCAGCTGGAT GAAG

24

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

GAGGTACACT GACATACTGG CATG

24

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 60 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

GTACGCCATA TCAGCTGGAT GAAGACAGGA GACGAGGGGG AAAAGGGTTG GGGCGGATGC

60

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

ACAGGAGACG AGGGGGAAAA GGGTTGGGGC GGATGC

36

(2) INFORMATION FOR SEQ ID NO:57:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

GTACTCCATA TCAGCTGGAT GAAG

24

(2) INFORMATION FOR SEQ ID NO:58:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

GGCTGATGCT GCACCAACTG TATCCATCTT CCCACCATCC AG

42

(2) INFORMATION FOR SEQ ID NO:59:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

CTCACGTTTC GTGCTGGGAC CAAGCTGGAG CTGAAACGTA AG

42

(2) INFORMATION FOR SEQ ID NO:60:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

ACTATGCTAT GGACTACTGG GGTCAAGGAA CCTCAGTCAC CG

42

(2) INFORMATION FOR SEQ ID NO:61:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 59 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

GGCCGCTCGA CGATAGCCTC GAGGCTATAA ATCTAGAAGA ATTCCAGCAA AGCTTTGGC 59

(2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 48 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

CAAGAGCCCG CCTAATGAGC GGGCTTTTTT TTGCATACTG CGGCCGCT 48

(2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 48 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

AATTAGCGGC CGCAGTATGC AAAAAAAGC CCGCTCATTA GCGGGGCT 48

(2) INFORMATION FOR SEQ ID NO:64:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 59 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

GCGGCCGCCT CGAGATCACT ATCGATTAAT TAAGGATCCA GCAGTAAGCT TGCGGCCGC 59

## (2) INFORMATION FOR SEQ ID NO:65:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 53 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

GCGGCCGCAT CCCGGGTCTC GAGGTCGACA AGCTTTCGAG GATCCGCGGC CGC 53

## (2) INFORMATION FOR SEQ ID NO:66:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 47 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

GCGGCCGCTG TCGACAAGCT TATCGATGGA TCCTCGAGTG CGGCCGC 47

## (2) INFORMATION FOR SEQ ID NO:67:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 65 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

GCGGCCGCTG TCGACAAGCT TCGAATTCAG ATCGATGTGG TACCTGGATC CTCGAGTGCG 60

GCCGC 65

## (2) INFORMATION FOR SEQ ID NO:68:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 51 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

GGCCGCAAGC TTACTGCTGG ATCCTTAATT AATCGATAGT GATCTCGAGG C

51

(2) INFORMATION FOR SEQ ID NO:69:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 51 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

GGCCGCCTCG AGATCACTAT CGATTAATTA AGGATCCAGC AGTAAGCTTG C

51

(2) INFORMATION FOR SEQ ID NO:70:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 39 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

CTCCAGGATC CAGATATCAG TACCTGAAAC AGGGCTTG C

39

(2) INFORMATION FOR SEQ ID NO:71:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 39 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

CTCGAGCATG CACAGGACCT GGAGCACACA CAGCCTTCC

39

(2) INFORMATION FOR SEQ ID NO:72:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 3618 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

(A) NAME/KEY: -

(B) LOCATION: 1..3618

(D) OTHER INFORMATION: /note= "vector pGPe"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

|            |            |            |            |            |            |      |
|------------|------------|------------|------------|------------|------------|------|
| AATTAGCGGC | CGCCTCGAGA | TCACTATCGA | TTAATTAAGG | ATCCAGATAT | CAGTACCTGA | 60   |
| AACAGGGCTG | CTCACAACAT | CTCTCTCTCT | GTCTCTCTGT | CTCTGTGTGT | GTGTCTCTCT | 120  |
| CTGTCTCTGT | CTCTCTCTGT | CTCTCTGTCT | CTGTGTGTGT | CTCTCTCTGT | CTCTCTCTCT | 180  |
| GTCTCTCTGT | CTCTCTGTCT | GTCTCTGTCT | CTGTCTCTGT | CTCTCTCTCT | CTCTCTCTCT | 240  |
| CTCTCTCTCT | CTCTCTCACA | CACACACACA | CACACACACA | CACACCTGCC | GAGTGACTCA | 300  |
| CTCTGTGCAG | GGTTGGCCCT | CGGGGCACAT | GCAAATGGAT | GTTTGTTCCA | TGCAGAAAAA | 360  |
| CATGTTTCTC | ATTCTCTGAG | CCAAAAATAG | CATCAATGAT | TCCCCACCC  | TGCAGCTGCA | 420  |
| GGTTCACCCC | ACCTGGCCAG | GTTGACCAGC | TTTGGGGATG | GGGCTGGGGG | TTCCATGACC | 480  |
| CCTAACGGTG | ACATTGAATT | CAGTGTTTTT | CCATTTATCG | ACACTGCTGG | AATCTGACCC | 540  |
| TAGGAGGGAA | TGACAGGAGA | TAGGCAAGGT | CCAAACACCC | CAGGGAAGTG | GGAGAGACAG | 600  |
| GAAGGCTGTG | TGTGCTCCAG | GTCCTGTGCA | TGCTGCAGAT | CTGAATTCCC | GGGTACCAAG | 660  |
| CTTGCGGCCG | CAGTATGCAA | AAAAAAGCCC | GCTCATTAGG | CGGGCTCTTG | GCAGAACATA | 720  |
| TCCATCGCGT | CCGCCATCTC | CAGCAGCCGC | ACGCGGCGCA | TCTCGGGCAG | CGTTGGGTCC | 780  |
| TGGCCACGGG | TGCGCATGAT | CGTGCTCCTG | TCGTTGAGGA | CCCGGCTAGG | CTGGCGGGGT | 840  |
| TGCCTTACTG | GTTAGCAGAA | TGAATCACCG | ATACGCGAGC | GAACGTGAAG | CGACTGCTGC | 900  |
| TGCAAAACGT | CTGCGACCTG | AGCAACAACA | TGAATGGTCT | TCGGTTTCCG | TGTTTCGTAA | 960  |
| AGTCTGGAAA | CGCGGAAGTC | AGCGCCCTGC | ACCATTATGT | TCCGGATCTG | CATCGCAGGA | 1020 |
| TGCTGCTGGC | TACCCTGTGG | AACACCTACA | TCTGTATTAA | CGAAGCGCTG | GCATTGACCC | 1080 |
| TGAGTGATTT | TTCTCTGGTC | CCGCCGCATC | CATACCGCCA | GTTGTTTACC | CTCACAACGT | 1140 |
| TCCAGTAACC | GGGCATGTTC | ATCATCAGTA | ACCCGTATCG | TCACGATCCT | CTCTCGTTTC | 1200 |
| ATCGGTATCA | TTACCCCCAT | GAACAGAAAT | TCCCCCTTAC | ACGGAGGCAT | CAAGTGACCA | 1260 |
| AACAGGAAAA | AACCGCCCTT | AACATGGCCC | GCTTTATCAG | AAGCCAGACA | TTAACGCTTC | 1320 |
| TGGAGAAACT | CAACGAGCTG | GACGCGGATG | AACAGGCAGA | CATCTGTGAA | TCGCTTCACG | 1380 |
| ACCACGCTGA | TGAGCTTTAC | CGCAGCTGCC | TCGCGCGTTT | CGGTGATGAC | GGTGAAAACC | 1440 |
| TCTGACACAT | GCAGCTCCCG | GAGACGGTCA | CAGCTTGTCT | GTAAGCGGAT | GCCGGGAGCA | 1500 |

|            |            |            |            |            |             |      |
|------------|------------|------------|------------|------------|-------------|------|
| GACAAGCCCG | TCAGGGCGCG | TCAGCGGGTG | TTGGCGGGTG | TCGGGGCGCA | GCCATGACCC  | 1560 |
| AGTCACGTAG | CGATAGCGGA | GTGTATACTG | GCTTAACTAT | GCGGCATCAG | AGCAGATTGT  | 1620 |
| ACTGAGAGTG | CACCATATGC | GGTGTGAAAT | ACCGCACAGA | TGCGTAAGGA | GAAAATACCG  | 1680 |
| CATCAGGCGC | TCTTCCGCTT | CCTCGCTCAC | TGACTCGCTG | CGCTCGGTCG | TTCGGCTGCG  | 1740 |
| GCGAGCGGTA | TCAGCTCACT | CAAAGGCGGT | AATACGGTTA | TCCACAGAAT | CAGGGGATAA  | 1800 |
| CGCAGGAAAG | AACATGTGAG | CAAAAGGCCA | GCAAAAGGCC | AGGAACCGTA | AAAAGGCCGC  | 1860 |
| GTTGCTGGCG | TTTTTCCATA | GGCTCCGCCC | CCCTGACGAG | CATCACAAAA | ATCGACGCTC  | 1920 |
| AAGTCAGAGG | TGGCGAAACC | CGACAGGACT | ATAAAGATAC | CAGGCGTTTC | CCCCTGGAAG  | 1980 |
| CTCCCTCGTG | CGCTCTCCTT | AGGTATCTCA | GTTCCGGTGT | GGTCGTTTCG | TCCAAGCTGG  | 2040 |
| GCTGTGTGCA | CGAACCCCCC | GTTCAGCCCC | ACCGCTGCGC | CTTATCCGGT | AACTATCGTC  | 2100 |
| TTGAGTCCAA | CCCGTAAGA  | CACGACTTAT | CGCCACTGGC | AGCAGCCACT | GGTAACAGGA  | 2160 |
| TTAGCAGAGC | GAGGTATGTA | GGCGGTGCTA | CAGAGTTCTT | GAAGTGGTGG | CCTAACTACG  | 2220 |
| GCTACACTAG | AAGGACAGTA | TTTGGTATCT | GCGCTCTGCT | GAAGCCAGTT | ACCTTCGGAA  | 2280 |
| AAAGAGTTGG | TAGCTCTTGA | TCCGGCAAAC | AAACCACCGC | TGGTAGCGGT | GGTTTTTTTTG | 2340 |
| TTTGCAAGCA | GCAGATTACG | CGCAGAAAAA | AAGGATCTCA | AGAAGATCCT | TTGATCTTTT  | 2400 |
| CTACGGGGTC | TGACGCTCAG | TGGAACGAAA | ACTCACGTTA | AGGGATTTTG | GTCATGAGAT  | 2460 |
| TATCAAAAAG | GATCTTCACC | TAGATCCTTT | TAAATTAAAA | ATGAAGTTTT | AAATCAATCT  | 2520 |
| AAAGTATATA | TGAGTAAACT | TGGTCTGACA | GTTACCAATG | CTTAATCAGT | GAGGCAGGTA  | 2580 |
| TCTCAGCGAT | CTGTCTATTT | CGTTCATCCA | TAGTTGCCTG | ACTCCCCGTC | GTGTAGATAA  | 2640 |
| CTACGATACG | GGAGGGCTTA | CCATCTGGCC | CCAGTGCTGC | AATGATACCG | CGAGACCCAC  | 2700 |
| GCTCACCGGC | TCCAGATTTA | TCAGCAATAA | ACCAGCCAGC | CGGAAGGGCC | GAGCGCAGAA  | 2760 |
| GTGGTCCTGC | AACTTTATCC | GCCTCCATCC | AGTCTATTAA | TTGTTGCCGG | GAAGCTAGAG  | 2820 |
| TAAGTAGTTC | GCCAGTTAAT | AGTTTGCGCA | ACGTTGTTGC | CATTGCTGCA | GGCATCGTGG  | 2880 |
| TGTCACGCTC | GTCGTTTGGT | ATGGCTTCAT | TCAGCTCCGG | TTCCCAACGA | TCAAGGCGAG  | 2940 |
| TTACATGATC | CCCCATGTTG | TGCAAAAAAG | CGGTTAGCTC | CTTCGGTCCT | CCGATCGTTG  | 3000 |
| TCAGAAGTAA | GTTGGCCGCA | GTGTTATCAC | TCATGGTTAT | GGCAGCACTG | CATAATTCTC  | 3060 |
| TTACTGTCAT | GCCATCCGTA | AGATGCTTTT | CTGTGACTGG | TGAGTACTCA | ACCAAGTCAT  | 3120 |
| TCTGAGAATA | GTGTATGCGG | CGACCGAGTT | GCTCTTGCCC | GGCGTCAACA | CGGGATAATA  | 3180 |
| CCGCGCCACA | TAGCAGAACT | TTAAAAGTGC | TCATCATTGG | AAAACGTTCT | TCGGGGCGAA  | 3240 |
| AACTCTCAAG | GATCTTACCG | CTGTTGAGAT | CCAGTTCGAT | GTAACCCACT | CGTGCACCCA  | 3300 |

ACTGATCTTC AGCATCTTTT ACTTTCACCA GCGTTTCTGG GTGAGCAAAA ACAGGAAGGC 3360  
 AAAATGCCGC AAAAAAGGGA ATAAGGGCGA CACGGAAATG TTGAATACTC ATACTCTTCC 3420  
 TTTTTCATA TTATTGAAGC ATTTATCAGG GTTATTGTCT GATGAGCGGA TACATATTG 3480  
 AATGTATTTA GAAAAATAAA CAAATAGGGG TTCCGCGCAC ATTTCCCCGA AAAGTGCCAC 3540  
 CTGACGTCTA AGAAACCATT ATTATCATGA CATTAACTA TAAAAATAGG CGTATCACGA 3600  
 GGCCCTTTTCG TCTTCAAG 3618

(2) INFORMATION FOR SEQ ID NO:73:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

GGACTGTGTC CCTGTGTGAT GCTTTTGATG TCTGGGGCCA AG 42

(2) INFORMATION FOR SEQ ID NO:74:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

CACCAAGTTG ACCTGCCTGG TCACAGACCT GACCACCTAT GA 42

(2) INFORMATION FOR SEQ ID NO:75:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

TGGTATTACT ATGTTTCGGG GAGTTATTAT AACCACAGTG TC 42



## (2) INFORMATION FOR SEQ ID NO:76:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

CAGCAGGTGC ACACCCAATG CCCATGAGCC CAGACACTGG AC

42

## (2) INFORMATION FOR SEQ ID NO:77:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

TGAGCCCAGA CACTGGAC

18

## (2) INFORMATION FOR SEQ ID NO:78:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 45 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

GTAAAGAGG ATTTTATTCA CCCCTGTGTC CTCTCCACAG GTGTC

45

## (2) INFORMATION FOR SEQ ID NO:79:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 812 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: CDS

(B) LOCATION: join(241..286, 373..677)

(D) OTHER INFORMATION: /note= "human V-HI family gene V-H49.8"

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

```

TTCCTCAGGC AGGATTTAGG GCTTGGTCTC TCAGCATCCC ACACTTGTAC AGCTGATGTG      60
GCATCTGTGT TTTCTTTCTC ATCCTAGATC AAGCTTTGAG CTGTGAAATA CCCTGCCTCA      120
TGAATATGCA AATAATCTGA GGTCTTCTGA GATAAATATA GATATATTGG TGCCCTGAGA      180
GCATCACATA ACAACCAGAT TCCTCCTCTA AAGAAGCCCC TGGGAGCACA GCTCATCACC      240
ATG GAC TGG ACC TGG AGG TTC CTC TTT GTG GTG GCA GCA GCT ACA G      286
Met Asp Trp Thr Trp Arg Phe Leu Phe Val Val Ala Ala Ala Thr
  1             5             10             15

GTAAGGGGCT TCCTAGTCCT AAGGCTGAGG AAGGGATCCT GGTTTAGTTA AAGAGGATTT      346
TATTCACCCC TGTGTCTCTT CCACAG  GT GTC CAG TCC CAG GTC CAG CTG GTG      398
                        Gly Val Gln Ser Gln Val Gln Leu Val
                        20

CAG TCT GGG GCT GAG GTG AAG AAG CCT GGG TCC TCG GTG AAG GTC TCC      446
Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser Ser Val Lys Val Ser
  25             30             35             40

TGC AAG GCT TCT GGA GGC ACC TTC AGC AGC TAT GCT ATC AGC TGG GTG      494
Cys Lys Ala Ser Gly Gly Thr Phe Ser Ser Tyr Ala Ile Ser Trp Val
             45             50             55

CGA CAG GCC CCT GGA CAA GGG CTT GAG TGG ATG GGA AGG ATC ATC CCT      542
Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Arg Ile Ile Pro
             60             65             70

ATC CTT GGT ATA GCA AAC TAC GCA CAG AAG TTC CAG GGC AGA GTC ACG      590
Ile Leu Gly Ile Ala Asn Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr
             75             80             85

ATT ACC GCG GAC AAA TCC ACG AGC ACA GCC TAC ATG GAG CTG AGC AGC      638
Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser
             90             95             100

CTG AGA TCT GAG GAC ACG GCC GTG TAT TAC TGT GCG AGA GACACAGTGT      687
Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
105             110             115

GAAAACCCAC ATCCTGAGAG TGTCAGAAAC CCTGAGGGAG AAGGCAGCTG TGCCGGGCTG      747
AGGAGATGAC AGGGTTTATT AGGTTTAAGG CTGTTTACAA AATGGGTTAT ATATTTGAGA      807
AAAAA                                             812

```

## (2) INFORMATION FOR SEQ ID NO:80:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 117 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

```

Met Asp Trp Thr Trp Arg Phe Leu Phe Val Val Ala Ala Ala Thr Gly
 1           5           10           15
Val Gln Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
          20           25           30
Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe
          35           40           45
Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
          50           55           60
Glu Trp Met Gly Arg Ile Ile Pro Ile Leu Gly Ile Ala Asn Tyr Ala
          65           70           75           80
Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser
          85           90           95
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
          100          105          110
Tyr Tyr Cys Ala Arg
          115

```

(2) INFORMATION FOR SEQ ID NO:81:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

CCGGTCGACC GG

12

(2) INFORMATION FOR SEQ ID NO:82:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 40 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

CTAGCTCGAG TCCAAGGAGT CTGTGCCGAG GTGCAGCTGN

40

## (2) INFORMATION FOR SEQ ID NO:83:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 40 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

GTTGCTCGAG TGAAAGGTGT CCA GTGTGAG GTGCAGCTGN

40

## (2) INFORMATION FOR SEQ ID NO:84:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

GGCGCTCGAG TTCCACGACA CCGTCACCGG TTC

33

## (2) INFORMATION FOR SEQ ID NO:85:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

CCTGCTCGAG GCAGCCAACG GCCACGCTGC TCG

33

## (2) INFORMATION FOR SEQ ID NO:86:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 88 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

TACTGTGCGA GACGGCTAAA CTGGGGTTGA TGCTTTTGAT ATCTGGGGCC AAGGGACAAT 60  
GGTCACCGTC TCTTCAGCCT CCACCAAG 88

## (2) INFORMATION FOR SEQ ID NO:87:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 87 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

TACTGTGCGA GACACCGTAT AGCAGCAGCT GGCTTTGACT ACTGGGGCCA GGAACCCCTG 60  
GTCACCGTCT CCTCAGCCTC CACCAAG 87

## (2) INFORMATION FOR SEQ ID NO:88:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 87 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

TACTGTGCGA GATATTACTA CTACTACTAC GGTATGGACG TCTGGGGCCA AGGGACCACG 60  
GTCACCGTCT CCTCAGCCTC CACCAAG 87

## (2) INFORMATION FOR SEQ ID NO:89:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 104 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

TACTGTGCGA GACATTACGA TATTTTGACT GGTCTACTA CTACTACGGT ATGGACGTCT 60  
GGGGCCAAGG GACCACGGTC ACCGTCTCCT CAGCCTCCAC CAAG 104

## (2) INFORMATION FOR SEQ ID NO:90:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 101 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

TACTGTGCGA GACGGAGGTA CTATGGTTCG GGGAGTTATT ATAACGTCTT TGACTACTGG 60  
 GGCCAGGGAA CCTGGTCACC GTCTCCTCAG CCTCCACCAA G 101

## (2) INFORMATION FOR SEQ ID NO:91:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 84 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

TACTGTGCGA GACGGGGGGT GTCTGATGCT TTTGATATCT GGGGCCAAGG GACAATGGTC 60  
 ACCGTCTCTT CAGCCTCCAC CAAG 84

## (2) INFORMATION FOR SEQ ID NO:92:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 78 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

TACTGTGCGA GAGCAACTGG CGCTTTTGAT ATCTGGGGCC AAGGGACAAT GGTCACCGTC 60  
 TCTTCAGGGA GTGCATCC 78

## (2) INFORMATION FOR SEQ ID NO:93:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 99 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

|   |    |
|---|----|
| TACTGTGCGA GATCGGCTAA CTGGGGATCC TACTACTACT ACGGTATGGA CGTCTGGGGC | 60 |
| CAAGGGACCA CGGTCACCGT CTCCTCAGGG AGTGCATCC                        | 99 |

(2) INFORMATION FOR SEQ ID NO:94:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 69 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

|   |    |
|---|----|
| TACTGTGCGA GATACTTCCA GCACTGGGGC CAGGGCACCC TGGTCACCGT CTCCTCAGGG | 60 |
| AGTGCGTCC   | 69 |

(2) INFORMATION FOR SEQ ID NO:95:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 81 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

|   |    |
|---|----|
| TACTGTGCGA GACACGTAGC TAACTCTTTT GACTACTGGG GCCAGGGAAC CCTGGTCACC | 60 |
| GTCTCCTCAG GGAGTGCATC C   | 81 |

(2) INFORMATION FOR SEQ ID NO:96:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 93 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

|  |    |
|--|----|
| TACTGTGCGA GACAAATTAC TATGGTTCGG GGAGTTCCT TTGACTACTG GGGCCAGGGA | 60 |
|--|----|

ACCCTGGTCA CCGTCTCCTC AGGGAGTGCA TCC

93

(2) INFORMATION FOR SEQ ID NO:97:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 72 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

TACTGTGCGA GACAATACTT CCAGCACTGG GGCCAGGGCA CCCTGGTCAC CGTCTCCTCA 60  
GGGAGTGCAT CC 72

(2) INFORMATION FOR SEQ ID NO:98:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 93 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

TACTGTGCGA GACAAACTGG GGACTACTAC TACTACGGTA TGGACGTCTG GGGCCAAGGG 60  
ACCACGGTCA CCGTCTCCTC AGGGAGTGCA TCC 93

(2) INFORMATION FOR SEQ ID NO:99:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 107 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

TACTGTGCGA GACATTACTA TGGTTCGGGG AGTTATGACT ACTACTACTA CGGTATGGAC 60  
GTCTGGGGCC AAGGGACCAG GTCACCGTCT CCTCAGGGAG TGCATCC 107

(2) INFORMATION FOR SEQ ID NO:100:

- (i) SEQUENCE CHARACTERISTICS:



- (A) LENGTH: 64 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

TACTGTGCGA GACAGGGAGT GGGGCCAGGG AACCTGGTC ACCGTCTCCT CAGCCTCCAC 60  
CAAG 64

(2) INFORMATION FOR SEQ ID NO:101:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 80 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

TACTGTGCGA GATTCTGGGA GACTGGTTCG ACCCCTGGGG CCAGGGAACC CTGGTCACCG. 60  
TCTCCTCAGG GAGTGCATCC 80

(2) INFORMATION FOR SEQ ID NO:102:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 102 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

TACTGTGCGA GACGGAGGTA CTATGGTTCG GGGAGTTATT ATAACGTCTT TGACTACTGG 60  
GGCCAGGGAA CCCTGGTCAC CGTCTCCTCA GCCTCCACCA AG 102

(2) INFORMATION FOR SEQ ID NO:103:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 78 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

TACTGTGCGA GACAAACCTG GGGAGGAGAC TACTGGGGCC AGGGAACCCT GGTCACCGTC 60  
 TCCTCAGCCT CCACCAAG 78

## (2) INFORMATION FOR SEQ ID NO:104:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 99 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

TACTGTGCGA GAGGATATAG TGGCTACGAT AACTACTACT ACGGTATGGA CGTCTGGGGC 60  
 CAAGGGACCA CGGTCACCGT CTCCTCAGCC TCCACCAAG 99

## (2) INFORMATION FOR SEQ ID NO:105:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 84 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

TACTGTGCGA GACAAACTGG GGAGGACTAC TTTGACTACT GGGGCCAGGG AACCCCTGGTC 60  
 ACCGTCTCCT CAGGGAGTGC ATCC 84

## (2) INFORMATION FOR SEQ ID NO:106:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 94 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

TACTGRGCGA GATATAGTGG CTACGATTAC CTACTGGTAC TTCGATCTCT GGGGCCGTGG 60  
 CACCCTGGTC ACCGTCTCCT CAGCCTCCAC CAAG 94

## (2) INFORMATION FOR SEQ ID NO:107:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 96 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

|   |    |
|---|----|
| TACTGRGCGA GAGCATCCCT CCCCTCCTTT GACTACTACG GTATGGACGT CTGGGGCCAA | 60 |
| GGGACCACGG TCACCGTCTC CTCAGCCTCC ACCAAG                           | 96 |

## (2) INFORMATION FOR SEQ ID NO:108:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 76 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

|   |    |
|---|----|
| TACTGTGCGA GACGGGGTGG GGTTTGACTA CTGGGGCCAG GGAACCCTGG TCACCGTCTC | 60 |
| CTCAGGGAGT GCATCC   | 76 |

## (2) INFORMATION FOR SEQ ID NO:109:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 94 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

|   |    |
|---|----|
| TACTGTGTGC CGGTCGAAAC TTTACTACTA CTACTACGGT ATGGACGTCT GGGGCCAAGG | 60 |
| GACCACGGTC ACCGTCTCCT CAGGGAGTGC ATCC                             | 94 |

## (2) INFORMATION FOR SEQ ID NO:110:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 84 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

TACTGTGCGA GAGATATTTT GACTGGTTAA CGTGACTACT GGGGCCAGGG AACCTGGTC 60

ACCGTCTCCT CAGGGAGTGC ATCC 84

(2) INFORMATION FOR SEQ ID NO:111:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 93 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

TACTGTGCGA GACATGGTAT AGCAGCAGCT GGTACTGCTT TTGATATCTG GGGCCAAGGG 60

ACAATGGTCA CCGTCTCTTC AGGGAGTGCA TCC 93

(2) INFORMATION FOR SEQ ID NO:112:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 84 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

TACTGTGTGA GATCAACTGG GGTTGATGCT TTTGATATCT GGGGCCAAGG GACAATGGTC 60

ACCGTCTCTT CAGGGAGTGC ATCC 84

(2) INFORMATION FOR SEQ ID NO:113:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 85 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

TACTGTGCGG AAATAGCAGC AGCTGCCCTA CTTTGACTAC TGGGGCCAGG GAACCCTGGT 60  
 CACCGTCTCC TCAGGGAGTG CATCC 85

(2) INFORMATION FOR SEQ ID NO:114:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 87 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:114:

TACTGTGTGT GTATAGCAGC AGCTGGTAAA GGAAACGGCT ACTGGGGCCA GGGAACCCTG 60  
 GTCACCGTCT CCTCAGGGAG TGCATCC 87

(2) INFORMATION FOR SEQ ID NO:115:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 75 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

TACTGTGCGA GACAAACTG GGGTGACTAC TGGGGCCAGG GAACCCTGGT CACCGTCTCC 60  
 TCAGGGAGTG CATCC 75

(2) INFORMATION FOR SEQ ID NO:116:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 29 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Cys | Ala | Arg | Arg | Leu | Thr | Gly | Val | Asp | Ala | Phe | Asp | Ile | Trp | Gly |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Gln | Gly | Thr | Met | Val | Thr | Met | Ser | Ser | Ala | Ser | Thr | Lys |     |     |     |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     |     |     |     |

## (2) INFORMATION FOR SEQ ID NO:117:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 29 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:117:

Tyr Cys Ala Arg His Arg Ile Ala Ala Ala Gly Phe Asp Tyr Trp Gly  
 1 5 10 15  
 Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys  
 20 25

## (2) INFORMATION FOR SEQ ID NO:118:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 29 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:

Tyr Cys Ala Arg Tyr Tyr Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly  
 1 5 10 15  
 Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys  
 20 25

## (2) INFORMATION FOR SEQ ID NO:119:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 34 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:119:

Tyr Cys Ala Arg His Tyr Asp Ile Leu Thr Gly Pro Thr Thr Thr  
 1 5 10 15  
 Val Trp Thr Ser Gly Ala Lys Gly Pro Arg Ser Pro Ser Pro Gln Pro  
 20 25 30  
 Pro Pro

## (2) INFORMATION FOR SEQ ID NO:120:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 34 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

Tyr Cys Ala Arg Arg Arg Tyr Tyr Gly Ser Gly Ser Tyr Tyr Asn Val  
 1 5 10 15  
 Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Asp  
 20 25 30  
 Thr Lys

## (2) INFORMATION FOR SEQ ID NO:121:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 28 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

Tyr Cys Ala Arg Arg Gly Val Ser Asp Ala Phe Asp Ile Trp Gly Gln  
 1 5 10 15  
 Gly Thr Met Val Thr Val Ser Ser Ala Asp Thr Lys  
 20 25

## (2) INFORMATION FOR SEQ ID NO:122:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 26 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

Tyr Cys Ala Arg Ala Thr Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr  
 1 5 10 15  
 Met Val Thr Val Ser Ser Gly Ser Ala Ser  
 20 25

## (2) INFORMATION FOR SEQ ID NO:123:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

```

Tyr Cys Ala Arg Ser Ala Asn Trp Gly Ser Tyr Tyr Tyr Tyr Gly Met
1           5           10           15
Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Ser Ala
          20           25           30
Ser

```

## (2) INFORMATION FOR SEQ ID NO:124:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:

```

Tyr Cys Ala Arg Tyr Phe Gln His Trp Gly Gln Gly Thr Leu Val Thr
1           5           10           15
Val Ser Ser Gly Ser Ala Ser
          20

```

## (2) INFORMATION FOR SEQ ID NO:125:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:125:

```

Tyr Cys Ala Arg His Val Ala Asn Ser Phe Asp Tyr Trp Gly Gln Gly
1           5           10           15

```



Thr Leu Val Thr Val Ser Ser Gly Ser Ala Ser  
 20 25

(2) INFORMATION FOR SEQ ID NO:126:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 31 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:126:

Tyr Cys Ala Arg Gln Ile Thr Met Val Arg Gly Val Pro Phe Asp Tyr  
 1 5 10 15  
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Ser Ala Ser  
 20 25 30

(2) INFORMATION FOR SEQ ID NO:127:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 24 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:127:

Tyr Cys Ala Arg Gln Tyr Phe Gln His Trp Gly Gln Gly Thr Leu Val  
 1 5 10 15  
 Thr Val Ser Ser Gly Ser Ala Ser  
 20

(2) INFORMATION FOR SEQ ID NO:128:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 31 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:128:

Tyr Cys Ala Arg Gln Thr Gly Asp Tyr Tyr Tyr Tyr Gly Met Asp Val  
 1 5 10 15

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Ser Ala Ser  
                   20                                  25                                  30

(2) INFORMATION FOR SEQ ID NO:129:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 36 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:129:

Tyr Cys Ala Arg His Tyr Tyr Gly Ser Gly Ser Tyr Asp Tyr Tyr Tyr  
   1                  5                                  10                                  15

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
                   20                                  25                                  30

Gly Ser Ala Ser  
                   35

(2) INFORMATION FOR SEQ ID NO:130:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:130:

Tyr Cys Ala Arg Gln Gly Val Gly Pro Gly Asn Pro Gly His Arg Leu  
   1                  5                                  10                                  15

Leu Ser Leu His Gln  
                   20

(2) INFORMATION FOR SEQ ID NO:131:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 26 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:131:

Tyr Cys Val Arg Phe Trp Glu Thr Gly Ser Thr Pro Gly Ala Arg Glu  
 1                      5                      10                      15  
 Pro Trp Ser Pro Ser Pro Gln Gly Val His  
                     20                      25

## (2) INFORMATION FOR SEQ ID NO:132:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:132:

Tyr Cys Ala Arg Arg Arg Tyr Tyr Gly Ser Gly Ser Tyr Tyr Asn Val  
 1                      5                      10                      15  
 Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Ser  
                     20                      25                      30  
 Thr Lys

## (2) INFORMATION FOR SEQ ID NO:133:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:133:

Tyr Cys Ala Arg Gln Thr Trp Gly Gly Asp Tyr Trp Gly Gln Gly Thr  
 1                      5                      10                      15  
 Leu Val Thr Val Ser Ser Gly Ser Thr Lys  
                     20                      25

## (2) INFORMATION FOR SEQ ID NO:134:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:134:

Tyr Cys Ala Arg Gly Tyr Ser Gly Tyr Asp Asn Tyr Tyr Tyr Gly Ile  
 1                      5                      10                      15  
 His Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Ser Thr  
                     20                      25                      30  
 Lys

## (2) INFORMATION FOR SEQ ID NO:135:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 28 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:135:

Tyr Cys Ala Arg Gln Thr Gly Glu Asp Tyr Phe Asp Tyr Trp Gly Gln  
 1                      5                      10                      15  
 Gly Thr Leu Val Thr Val Ser Ser Gly Ser Ala Ser  
                     20                      25

## (2) INFORMATION FOR SEQ ID NO:136:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 31 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:136:

Tyr Cys Ala Arg Tyr Ser Gly Tyr Asp Tyr Leu Leu Val Leu Arg Ser  
 1                      5                      10                      15  
 Leu Gly Pro Trp His Pro Gly His Cys Leu Leu Ser Leu His Arg  
                     20                      25                      30

## (2) INFORMATION FOR SEQ ID NO:137:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 32 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:137:

Tyr Cys Ala Arg Ala Ser Leu Pro Ser Phe Asp Tyr Tyr Gly Met Asp  
 1                      5                      10                      15  
 Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Ser Thr Lys  
                     20                      25                      30

## (2) INFORMATION FOR SEQ ID NO:138:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 25 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:138:

Tyr Cys Ala Arg Arg Gly Gly Gly Leu Thr Thr Gly Ala Arg Glu Pro  
 1                      5                      10                      15  
 Trp Ser Pro Ser Pro Gln Gly Val His  
                     20                      25

## (2) INFORMATION FOR SEQ ID NO:139:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 31 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:139:

Tyr Cys Val Pro Val Glu Thr Leu Leu Leu Leu Arg Tyr Gly Arg  
 1                      5                      10                      15  
 Leu Gly Pro Arg Asp His Gly His Arg Leu Leu Arg Glu Cys Ile  
                     20                      25                      30

## (2) INFORMATION FOR SEQ ID NO:140:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 28 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:140:

Tyr Cys Val Arg Asp Ile Leu Thr Gly Glx Arg Asp Tyr Trp Gly Gln  
 1                      5                      10                      15

Gly Thr Leu Val Thr Val Ser Ser Gly Ser Ala Ser  
                     20                      25

## (2) INFORMATION FOR SEQ ID NO:141:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 31 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:141:

Tyr Cys Ala Arg His Gly Ile Ala Ala Ala Gly Thr Ala Phe Asp Ile  
 1                      5                      10                      15

Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Ser Ala Ser  
                     20                      25                      30

## (2) INFORMATION FOR SEQ ID NO:142:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 28 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:142:

Tyr Cys Val Arg Ser Thr Gly Val Asp Ala Phe Asp Ile Trp Gly Gln  
 1                      5                      10                      15

Gly Thr Met Val Thr Val Ser Ser Gly Ser Ala Ser  
                     20                      25

## (2) INFORMATION FOR SEQ ID NO:143:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 29 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:143:

```

Tyr Cys Ala Glu Ile Ala Ala Ala Ala Leu Leu Leu Glx Leu Leu Gly
1           5           10           15
Pro Gly Asn Pro Gly His Arg Leu Leu Arg Glu Cys Ile
          20           25

```

(2) INFORMATION FOR SEQ ID NO:144:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 29 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:144:

```

Tyr Cys Val Cys Ile Ala Ala Ala Gly Lys Gly Asn Gly Tyr Trp Gly
1           5           10           15
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Ser Ala Ser
          20           25

```

(2) INFORMATION FOR SEQ ID NO:145:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 25 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:145:

```

Tyr Cys Ala Arg Gln Asn Trp Gly Asp Tyr Trp Gly Gln Gly Thr Leu
1           5           10           15
Val Thr Val Ser Ser Gly Ser Ala Ser
          20           25

```

(2) INFORMATION FOR SEQ ID NO:146:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:146:

TCAGTGAAGG TTCCTGCAA GGCATCTGGA TACACCTTCA CC

42

(2) INFORMATION FOR SEQ ID NO:147:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:147:

TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GT

42

(2) INFORMATION FOR SEQ ID NO:148:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 45 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:148:

GGCCGCATCC CGGGTCTCGA GGTCGACAAG CTTTCGAGGA TCCGC

45

(2) INFORMATION FOR SEQ ID NO:149:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 45 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:149:

GGCCGCGGAT CCTCGAAAGC TTGTCGACCT CGAGACCCGG GATGC

45

(2) INFORMATION FOR SEQ ID NO:150:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 39 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear



(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:150:

GGCCGCTGTC GACAAGCTTA TCGATGGATC CTCGAGTGC

39

(2) INFORMATION FOR SEQ ID NO:151:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:151:

GGCCGCACTC GAGGATCCAT CGATAAGCTT GTCGACAGC

39

(2) INFORMATION FOR SEQ ID NO:152:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:152:

CACCTTCGGC CAAGGGACAC GACTGGAGAT TAAACGTAAG CA

42

(2) INFORMATION FOR SEQ ID NO:153:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 48 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:153:

AGGTTCA GTG GCAGTGGGTC TGGGACAGAC TTCACTCTCA CCATCAGC

48

(2) INFORMATION FOR SEQ ID NO:154:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:154:

GATCCTCGAG ACCAGGTACC AGATCTTGTG AATTCG

36

(2) INFORMATION FOR SEQ ID NO:155:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 36 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:155:

TCGACGAATT CACAAGATCT GGTACCTGGT CTCGAG

36

(2) INFORMATION FOR SEQ ID NO:156:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:156:

CGCGGTACCG AGAGTCAGTC CTTCCCAAAT GTC

33

(2) INFORMATION FOR SEQ ID NO:157:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:157:

CGCCTCGAGA CAGCTGGAAT GGGCACATGC AGA

33

(2) INFORMATION FOR SEQ ID NO:158:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:158:

CGCGGTACCG CTGATGCTGC ACCAACTGTA TCC

33

(2) INFORMATION FOR SEQ ID NO:159:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:159:

CGCCTCGAGC TAACACTCAT TCCTGTTGAA GCT

33

(2) INFORMATION FOR SEQ ID NO:160:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:160:

GGCGCTCGAG CTGGACAGGG MTCCAAGTT CCA

33

(2) INFORMATION FOR SEQ ID NO:161:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:161:

CCCACTCTG CATGCTGCAG AAGCTTTTCT GTA

33

## (2) INFORMATION FOR SEQ ID NO:162:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:162:

GGTGACTGAG GTACCTTGAC CCCAGTAGTC CAG

33

## (2) INFORMATION FOR SEQ ID NO:163:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:163:

GGTTACCTCA GTCACCGTCT CCTCAGAGGT AAGAATGGCC TC

42

## (2) INFORMATION FOR SEQ ID NO:164:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:164:

AGGCTCCACC AGACCTCTCT AGACAGCAAC TAC

33

## (2) INFORMATION FOR SEQ ID NO:165:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 51 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:165:

TGGGGTCAAG GAACCTCAGT CACCGTCTCC TCAGGTAAGA ATGGCCTCTC C

51

(2) INFORMATION FOR SEQ ID NO:166:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:166:

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gly | Gln | Gly | Thr | Ser | Val | Thr | Val | Ser | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

(2) INFORMATION FOR SEQ ID NO:167:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 53 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:167:

TGGGGTCAAG GTACCTCAGT CACCGTCTCC TCAGAGGTAA GAATGGCCTC TCC

53

(2) INFORMATION FOR SEQ ID NO:168:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:168:

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gly | Gln | Gly | Thr | Ser | Val | Thr | Val | Ser | Ser | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |

(2) INFORMATION FOR SEQ ID NO:169:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 46 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:169:

CTGGTCCTCA GAGAGTCAGT CCTTCCCAA TGTCTTCCCC CTCGTC

46

(2) INFORMATION FOR SEQ ID NO:170:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:170:

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ser | Gln | Ser | Phe | Pro | Asn | Val | Phe | Pro | Leu | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |

(2) INFORMATION FOR SEQ ID NO:171:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:171:

CTGGTCCTCA GAGTCAGTCC TTCCCGAATG TCTTCCCCCT CGTC

44

(2) INFORMATION FOR SEQ ID NO:172:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:172:

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Ser | Phe | Pro | Asn | Val | Phe | Pro | Leu | Val |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |

(2) INFORMATION FOR SEQ ID NO:173:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 39 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:173:

TAGAAGGAAT TCAGCAGGCA CACAACAGAG GCAGTTCCA

39

(2) INFORMATION FOR SEQ ID NO:174:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 38 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:174:

AGCTTCTCGA GCTCCTGCTG CTCTGTTTCC CAGGTGCC

38

(2) INFORMATION FOR SEQ ID NO:175:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 39 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:175:

CAGCTTCTCG AGCTCCTGCT ACTCTGGCTC MCAGATACC

39

(2) INFORMATION FOR SEQ ID NO:176:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 39 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:176:

TATTACTGTG CGAGGGCTCC AACTGGGGAC TGGTTCGAC

39





(xi) SEQUENCE DESCRIPTION: SEQ ID NO:180:

GGCGCGCCTT GGCCTAAGAG GCCA

24

(2) INFORMATION FOR SEQ ID NO:181:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 24 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:181:

CCTCTTAGGC CAAGGCGCGC CTGG

24

(2) INFORMATION FOR SEQ ID NO:182:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:182:

AATTCAGTAT CGATGTGGTA C

21

(2) INFORMATION FOR SEQ ID NO:183:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:183:

CACATCGATA CTG

13

(2) INFORMATION FOR SEQ ID NO:184:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:184:

GTTTGCAGGT GTCCAGTGTS AGGTGCAGCT GKTGGAGTCY SG

42

(2) INFORMATION FOR SEQ ID NO:185:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:185:

CCGGTCGACC CG

12

(2) INFORMATION FOR SEQ ID NO:186:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 22 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:186:

TCACAAGCCC AGCAACACCA AG

22

(2) INFORMATION FOR SEQ ID NO:187:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 24 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:187:

AAAAGCCAGA AGACCCTCTC CCTG

24

(2) INFORMATION FOR SEQ ID NO:188:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:188:

CAATAGGGGT CATGGACCC

19

(2) INFORMATION FOR SEQ ID NO:189:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:189:

TCATTCTGTG CAGAGTTGGC

20

(2) INFORMATION FOR SEQ ID NO:190:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 32 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:190:

GTCCAGAATT CGGTBCAGCT GGTGSAGTCT GG

32

(2) INFORMATION FOR SEQ ID NO:191:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 32 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:191:

GGTTTCTCGA GGAAGAGGAA GACTGACGGT CC

32

## (2) INFORMATION FOR SEQ ID NO:192:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:192:

GACATCCAGC TGACCCAGTC TCC

23

## (2) INFORMATION FOR SEQ ID NO:193:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:193:

GATATTCAGC TGACTCAGTC TCC

23

## (2) INFORMATION FOR SEQ ID NO:194:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:194:

GAAATTCAGC TGACGCAGTC TCC

23

## (2) INFORMATION FOR SEQ ID NO:195:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:195:

GAAACGCAGC TGACGCAGTC TCC

23

(2) INFORMATION FOR SEQ ID NO:196:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 35 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:196:

GCAAGCTTCT GTCCAGACC CACTGCCACT GAACC

35

(2) INFORMATION FOR SEQ ID NO:197:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 26 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:197:

CGGTTAACAT AGCCCTGGGA CGAGAC

26

(2) INFORMATION FOR SEQ ID NO:198:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 26 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:198:

GGGTAACTC ATTGCCTCCA AAGCAC

26

(2) INFORMATION FOR SEQ ID NO:199:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 413 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:199:

|   |     |
|---|-----|
| TGCACAAGAA CATGAAACAC CTGTGGTTCT TCCTCCTCCT GGTGGCAGCT CCCAGATGGG | 60  |
| TCCTGTCCCA GGTGCAGCTT CATCAGTGGG GCGCAGGACT GTTGAAGCCT TCGGAGACCC | 120 |
| TGTCCCTCAC CTGCGCTGTC TATGGTGGGT CCTTCAGTGG TTACTTCTGG AGCTGGATCC | 180 |
| GCCAGCCCCC AGGGAGGGGG CTGGAGTGGG TTGGGGAAAT CCATCATCGT GGAAGCACCA | 240 |
| ACTACAACCC GTCCCTCGAG AGTCGAGTCA CCCTATCAGT AGACACGTCC AAAAACCAGT | 300 |
| TCTCCCTGAG GCTGAGTTCT GTGACCGCCG CGGACACGGC TGTGTATTAC TGTGCGAGAG | 360 |
| ACATTACTAT GGTTCGGGGA GTACCTCACT GGGGCCAGGG AACCTGGTC ACC         | 413 |

(2) INFORMATION FOR SEQ ID NO:200:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 153 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:200:

|   |     |
|---|-----|
| GACAGACTTC ACTCTACCA TCAGCAGACT GGAGCCTGAA GATTTTGCAG TGTATTACTG  | 60  |
| TCAGCAGTAT GGTAGCTCAC CCCTCACTTT CGGCGGAGGG ACCAAGGTGG AGATCAAACG | 120 |
| AACTGTGGCG GCACCATCTG TCTTCATCTT CCC                              | 153 |

(2) INFORMATION FOR SEQ ID NO:201:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 414 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:201:

|   |     |
|---|-----|
| TCCACCATCA TGGGGTCAAC CGCCATCCTC GCCCTCCTCC TGGCTGTTCT CCAAGGAGTC | 60  |
| TGTGCCGAGG TGCAGCTGGT GCAGTCTGGA GCAGAGGTGA AAAAGCCCGG GGAGTCTCTG | 120 |
| AAGATCTCCT GTAAGGGTTC TGGATACAGC TTTACCAGTT ACTGGATCGC CTGGGTGCGC | 180 |
| CAGATGCCCC GGAAAGGCCT GGAGTGGATG GGGATCATCG ATCCTGCTGA CTCTGATACC | 240 |

|   |     |
|---|-----|
| AGATACAACC CGTCCTTCCA AGGCCAGGTC ACCATCTCAG CCGACAAGTC CATCAGTACC | 300 |
| GCCTATTTGC AGTGGAGCAG CCTGAAGGCC TCGGACACCG CCATGTATTA CTGTGCGAGA | 360 |
| CCAGCGAACT GGAAGTGGTA CTTCTGTTCTC TGGGGCCGTG GCACCCTGGT CACT      | 414 |

## (2) INFORMATION FOR SEQ ID NO:202:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 156 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:202:

|   |     |
|---|-----|
| GACAGATTTT ACTCTCACCA TCAGCAGCCT GCAGCCTGAA GATTTTGCAA CTTATTACTG | 60  |
| TCAACAGTTT ATTAGTTACC CTCAGCTCAC TTTCGGCGGA GGGACCAGGG TGGAGATCAA | 120 |
| ACGAACTGTG GCTGCACCAT CTGTCTTCAT CTCCCC                           | 156 |

## (2) INFORMATION FOR SEQ ID NO:203:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 404 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:203:

|   |     |
|---|-----|
| TGCACAAGAA CATGAAACAC CTGTGGTTCT TCCTCCTCCT GGTGGCAGCT CCCAGATGGG | 60  |
| TCCTGTCCCA GGTGCAGCTA CAGCAGTGGG GCGCAGGACT GTTGAAGCCT TCGGAGACCC | 120 |
| TGTCCCTCAC CTGCGCTGTC TATGGTGGGT CCTTCAGTGG TTACTACTGG AGCTGGATCC | 180 |
| GCCAGCCCCC AGGTAAGGGG CTGGAGTGGG TTGGGGAAAT CAATCATAGT GGAAGCACCA | 240 |
| ACTACAACCC GTCCCTCAAG AGTCGAGTCA CCATATCAGT CGACACGTCC AAGAACCAGT | 300 |
| TCTCCCTGAA ACTGAGCTCT GTGACCGCCG CGGACACGGC TGTGTATTAC TGTGCGAGAG | 360 |
| TAATTAATTG GTTCGACCCC TGGGGCCAGG GAACCCTGGT CACC                  | 404 |

## (2) INFORMATION FOR SEQ ID NO:204:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 153 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:204:

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| GACAGATTTT | ACTCTCACCA | TCAGCAGCCT | GCAGCCTGAA | GATTTTGCAA | CTTACTATTG | 60  |
| TCAACAGGCT | AATAGTTTCC | CGTACACTTT | TGGCCAGGGG | ACCAAGCTGG | AGATCAAACG | 120 |
| AACTGTGGCT | GCACCATCTG | TCTTCATCTT | CCC        |            |            | 153 |

(2) INFORMATION FOR SEQ ID NO:205:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 403 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:205:

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| ATGAAACACC | TGTGGTTCTT | CCTCCTCCTG | GTGGCAGCTC | CCAGATGGGT | CCTGTCCCAG | 60  |
| GTGCAGCTAC | AGCAGTGGGG | CGCAGGACTG | TTGAAGCCTT | CGGAGACCCT | GTCCCTCACC | 120 |
| TGCGCTGTCT | ATGGTGGGTC | CTTCAGTGGT | TACTACTGGA | GCTGGATCCG | CCAGCCCCCA | 180 |
| GGTAAGGGGC | TGGAGTGGAT | TGGGGAAATC | AATCATAGTG | GAAGCACCAA | CTACAACCCG | 240 |
| TCCCTCAAGA | GTCGAGTCAC | CATATCAGTC | GACACGTCCA | AGAACCAGTT | CTCCCTGAAG | 300 |
| CTGAGCTCTG | TGACCGCCGC | GGACACGGCT | GTGTATTACT | GTGCGAGAGT | AATTAATTGG | 360 |
| TTCGACCCCT | GGGGCCAGGG | AACCCTGGTC | ACCGTCTCCT | CAG        |            | 403 |

(2) INFORMATION FOR SEQ ID NO:206:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 388 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:206:

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| ATGGACATGA | TGGTCCCCGC | TCAGCTCCTG | GGGCTCCTGC | TGCTCTGGTT | CCCAGGTTCC | 60  |
| AGATGCGACA | TCCAGATGAC | CCAGTCTCCA | TCTTCCGTGT | CTGCATCTGT | AGGAGACAGA | 120 |
| GTCACCATCA | CTTGTCGGGC | GAGTCAGGAT | ATTAGCAGCT | GGTTAGCCTG | GTATCAGCAT | 180 |



|  |     |
|--|-----|
| AAACCAGGGA AAGCCCCTAA GCTCCTGATC TATGCTGCAT CCAGTTTGCA AAGTGGGGTC  | 240 |
| CCATCAAGGT TCAGCGGCAG TGGATCTGGG ACAGATTTC A CTCTACCAT CAGCAGCCTG  | 300 |
| CAGCCTGAAG ATTTTGCAAC TTA CTATTGT CAACAGGCTA ATAGTTTCCC GTACACTTTT | 360 |
| GGCCAGGGGA CCAAGCTGGA GATCAAAC                                     | 388 |

## (2) INFORMATION FOR SEQ ID NO:207:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 462 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:207:

|   |     |
|---|-----|
| ATGGGGTCAA CCGCCATCCT CGCCCTCCTC CTGGCTGTTT TCCAAGGAGT CTGTGCCGAG | 60  |
| GTGCAGCTGG TGCAGTCTGG AGCAGAGGTG AAAAAGCCCG GGGAGTCTCT GAAGATCTCC | 120 |
| TGTAAGGGTT CTGGATACAG CTTTACCGGC TACTGGATCG GCTGGGTGCG CCAGATGCCC | 180 |
| GGGAAAGGCC TGGAGTGGAT GGGGATCATC TATCCTGGTG ACTCTGATAC CACATACAGC | 240 |
| CCGTCCTTCC AAGGCCAGGT CACCATCTCA GCCGACAAGT CCATCAGCAC CGCCTACCTG | 300 |
| CAGTGGAGCA GCCTGAAGGC CTCGGACACC GCCATGTATT ACTGTGCGAG AGACCAACTG | 360 |
| GGCCTCTTTG ACTACTGGGG CCAGGGAACC CTGGTCACCG TCTCCTCAGC CTCCACCAAG | 420 |
| GGCCCATCGG TCTTCCCCCT GGCACCCTCC TCCAAGAAGC TT                    | 462 |

## (2) INFORMATION FOR SEQ ID NO:208:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 439 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:208:

|  |     |
|--|-----|
| ATGGACATGG AGTTCCCCGT TCAGCTCCTG GGGCTCCTGC TGCTCTGTTT CCCAGGTGCC  | 60  |
| AGATGTGACA TCCAGATGAC CCAGTCTCCA TCCTCACTGT CTGCATCTGT AGGAGACAGA  | 120 |
| GTCACCATCA CTTGTCTGGGC GAGTCAGGGT ATTAGCAGCT GGTTAGCCTG GTATCAGCAG | 180 |
| AAACCAGAGA AAGCCCCTAA GTCCCTGATC TATTCTGCAT CCAGTTTGCA AAGTGGGGTC  | 240 |
| CCATCAAGGT TCAGCGGCAG TGGATCTGGG ACAGATTTC A CTCTACCAT CAGCAGCCTG  | 300 |

CAGCCTGAAG ATTTTGCAAC TTATTACTGC CAACAGTATG ATAGTTACCC GTACACTTTT 360  
 GGCCAGGGGA CCAAGCTGGA GATCAAACGA ACTGTGGCTG CACCATCTGT CTTTCATCTTC 420  
 CCGCCATCTG ATGAAGCTT 439

(2) INFORMATION FOR SEQ ID NO:209:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:209:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ile | Thr | Met | Val | Arg | Gly | Val | Pro | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:210:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:210:

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gln | Tyr | Gly | Ser | Ser | Pro | Leu | Thr |
| 1   |     |     |     | 5   |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:211:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:211:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Asn | Trp | Asn | Trp | Tyr | Phe | Val | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:212:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:212:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gln | Phe | Ile | Ser | Tyr | Pro | Gln | Leu | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:213:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:213:

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Val | Ile | Asn | Trp | Phe | Asp | Pro |
| 1   |     |     |     | 5   |     |     |

(2) INFORMATION FOR SEQ ID NO:214:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:214:

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gln | Ala | Asn | Ser | Phe | Pro | Tyr | Thr |
| 1   |     |     |     | 5   |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO:215:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 8 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:215:

Asp Gln Leu Gly Leu Phe Asp Tyr  
1 5

(2) INFORMATION FOR SEQ ID NO:216:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 9 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:216:

Gln Gln Tyr Asp Ser Tyr Pro Tyr Thr  
1 5

(2) INFORMATION FOR SEQ ID NO:217:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 3881 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:217:

|   |     |
|---|-----|
| TCTTCCGCTT CCTCGCTCAC TGACTCGCTG CGCTCGGTCG TTCGGCTGCG GCGAGCGGTA | 60  |
| TCAGCTCACT CAAAGGCGGT AATACGGTTA TCCACAGAAT CAGGGGATAA CGCAGGAAAG | 120 |
| AACATGTGAG CAAAAGGCCA GCAAAAGGCC AGGAACCGTA AAAAGGCCGC GTTGCTGGCG | 180 |
| TTTTTCCATA GGCTCCGCCC CCCTGACGAG CATCACAAAA ATCGACGCTC AAGTCAGAGG | 240 |
| TGGCGAAACC CGACAGGACT ATAAAGATAC CAGGCGTTTC CCCCTGGAAG CTCCCTCGTG | 300 |
| CGCTCTCCTG TTCCGACCCT GCCGCTTACC GGATACCTGT CCGCCTTTCT CCCTTCGGGA | 360 |
| AGCGTGGCGC TTTCTCATAG CTCACGCTGT AGGTATCTCA GTTCGGTGTA GGTCGTTCGC | 420 |
| TCCAAGCTGG GCTGTGTGCA CGAACCCCCC GTTCAGCCCG ACCGCTGCGC CTTATCCGGT | 480 |
| AACTATCGTC TTGAGTCCAA CCCGGTAAGA CACGACTTAT CGCCACTGGC AGCAGCCACT | 540 |
| GGTAACAGGA TTAGCAGAGC GAGGTATGTA GGCGGTGCTA CAGAGTTCTT GAAGTGGTGG | 600 |
| CCTAACTACG GCTACACTAG AAGGACAGTA TTTGGTATCT GCGCTCTGCT GAAGCCAGTT | 660 |
| ACCTTCGGAA AAAGAGTTGG TAGCTCTTGA TCCGGCAAAC AAACCACCGC TGGTAGCGGT | 720 |
| GGTTTTTTTG TTTGCAAGCA GCAGATTACG CGCAGAAAAA AAGGATCTCA AGAAGATCCT | 780 |

|            |            |            |            |            |            |      |
|------------|------------|------------|------------|------------|------------|------|
| TTGATCTTTT | CTACGGGGTC | TGACGCTCAG | TGGAACGAAA | ACTCACGTTA | AGGGATTTTG | 840  |
| GTCATGAGAT | TATCAAAAAG | GATCTTCACC | TAGATCCTTT | TAAATTAAAA | ATGAAGTTTT | 900  |
| AAATCAATCT | AAAGTATATA | TGAGTAAACT | TGGTCTGACA | GTTACCAATG | CTTAATCAGT | 960  |
| GAGGCACCTA | TCTCAGCGAT | CTGTCTATTT | CGTTCATCCA | TAGTTGCCTG | ACTCCCCGTC | 1020 |
| GTGTAGATAA | CTACGATACG | GGAGGGCTTA | CCATCTGGCC | CCAGTGCTGC | AATGATACCG | 1080 |
| CGAGACCCAC | GCTCACCGGC | TCCAGATTTA | TCAGCAATAA | ACCAGCCAGC | CGGAAGGGCC | 1140 |
| GAGCGCAGAA | GTGGTCCTGC | AACTTTATCC | GCCTCCATCC | AGTCTATTAA | TTGTTGCCGG | 1200 |
| GAAGCTAGAG | TAAGTAGTTC | GCCAGTTAAT | AGTTTGCGCA | ACGTTGTTGC | CATTGCTACA | 1260 |
| GGCATCGTGG | TGTCACGCTC | GTCGTTTGGT | ATGGCTTCAT | TCAGCTCCGG | TTCCCAACGA | 1320 |
| TCAAGGCGAG | TTACATGATC | CCCCATGTTG | TGCAAAAAG  | CGGTTAGCTC | CTTCGGTCCT | 1380 |
| CCGATCGTTG | TCAGAAGTAA | GTTGGCCGCA | GTGTTATCAC | TCATGGTTAT | GGCAGCACTG | 1440 |
| CATAATTCTC | TTACTGTCAT | GCCATCCGTA | AGATGCTTTT | CTGTGACTGG | TGAGTACTCA | 1500 |
| ACCAAGTCAT | TCTGAGAATA | GTGTATGCGG | CGACCGAGTT | GCTCTTGCCC | GGCGTCAATA | 1560 |
| CGGGATAATA | CCGCGCCACA | TAGCAGAACT | TTAAAAGTGC | TCATCATTGG | AAAACGTTCT | 1620 |
| TCGGGGCGAA | AACTCTCAAG | GATCTTACCG | CTGTTGAGAT | CCAGTTCGAT | GTAACCCACT | 1680 |
| CGTGCACCCA | ACTGATCTTC | AGCATCTTTT | ACTTTCACCA | GCGTTTCTGG | GTGAGCAAAA | 1740 |
| ACAGGAAGGC | AAAATGCCGC | AAAAAAGGGA | ATAAGGGCGA | CACGGAAATG | TTGAATACTC | 1800 |
| ATACTCTTCC | TTTTTCAATA | TTATTGAAGC | ATTTATCAGG | GTTATTGTCT | CATGAGCGGA | 1860 |
| TACATATTTG | AATGTATTTA | GAAAAATAAA | CAAATAGGGG | TTCCGCGCAC | ATTTCCCCGA | 1920 |
| AAAGTGCCAC | CTGACGTCTA | AGAAACCATT | ATTATCATGA | CATTAACTA  | TAAAAATAGG | 1980 |
| CGTATCACGA | GGCCCTTTTC | TCTCGCGCGT | TTCGGTGATG | ACGGTGAAAA | CCTCTGACAC | 2040 |
| ATGCAGCTCC | CGGAGACGGT | CACAGCTTGT | CTGTAAGCGG | ATGCCGGGAG | CAGACAAGCC | 2100 |
| CGTCAGGGCG | CGTCAGCGGG | TGTTGGCGGG | TGTCGGGGCT | GGCTTAACTA | TGCGGCATCA | 2160 |
| GAGCAGATTG | TACTGAGAGT | GCACCATATG | CGGTGTGAAA | TACCGCACAG | ATGCGTAAGG | 2220 |
| AGAAAATACC | GCATCAGGCG | CCATTCGCCA | TTCAGGCTGC | GCAACTGTTG | GGAAGGGCGA | 2280 |
| TCGGTGCGGG | CCTCTTCGCT | ATTACGCCAG | CTGGCGAAAG | GGGGATGTGC | TGCAAGGCGA | 2340 |
| TTAAGTTGGG | TAACGCCAGG | GTTTTCCCAG | TCACGACGTT | GTAAAACGAC | GGCCAGTGCC | 2400 |
| AAGCTAGCGG | CCGCGGTCCA | ACCACCAATC | TCAAAGCTTG | GTACCCGGGA | GCCTGTTATC | 2460 |
| CCAGCACAGT | CCTGGAAGAG | GCACAGGGGA | AATAAAAGCG | GACGGAGGCT | TTCTTTGACT | 2520 |
| CAGCCGCTGC | CTGGTCTTCT | TCAGACCTGT | TCTGAATTCT | AAACTCTGAG | GGGGTCGGAT | 2580 |
| GACGTGGCCA | TTCTTTGCCT | AAAGCATTGA | GTTTACTGCA | AGGTCAGAAA | AGCATGCAAA | 2640 |

|  |      |
|--|------|
| GCCCTCAGAA TGGCTGCAAA GAGCTCCAAC AAAACAATTT AGAACTTTAT TAAGGAATAG  | 2700 |
| GGGGAAGCTA GGAAGAAACT CAAAACATCA AGATTTTAAA TACGCTTCTT GGTCTCCTTG  | 2760 |
| CTATAATTAT CTGGGATAAG CATGCTGTTT TCTGTCTGTC CCTAACATGC CCTGTGATTA  | 2820 |
| TCCGCAAACA ACACACCCAA GGGCAGAACT TTGTTACTTA AACACCATCC TGTTTGCTTC  | 2880 |
| TTTCCTCAGG AACTGTGGCT GCACCATCTG TCTTCATCTT CCCGCCATCT GATGAGCAGT  | 2940 |
| TGAAATCTGG AACTGCCTCT GTTGTGTGCC TGCTGAATAA CTTCTATCCC AGAGAGGCCA  | 3000 |
| AAGTACAGTG GAAGGTGGAT AACGCCCTCC AATCGGGTAA CTCCCAGGAG AGTGTACACG  | 3060 |
| AGCAGGACAG CAAGGACAGC ACCTACAGCC TCAGCAGCAC CCTGACGCTG AGCAAAGCAG  | 3120 |
| ACTACGAGAA ACACAAAGTC TACGCCTGCG AAGTCACCCA TCAGGGCCTG AGCTCGCCCCG | 3180 |
| TCACAAAGAG CTTCAACAGG GGAGAGTGTT AGAGGGAGAA GTGCCCCCAC CTGCTCCTCA  | 3240 |
| GTTCCAGCCT GACCCCCTCC CATCCTTTGG CCTCTGACCC TTTTTCACA GGGGACCTAC   | 3300 |
| CCCTATTGCG GTCCTCCAGC TCATCTTTCA CCTCACCCCC CTCCTCCTCC TTGGCTTTAA  | 3360 |
| TTATGCTAAT GTTGGAGGAG AATGAATAAA TAAAGTGAAT CTTTGCACCT GTGGTTTCTC  | 3420 |
| TCTTTCCTCA ATTTAATAAT TATTATCTGT TGTTTACCAA CTACTCAATT TCTCTTATAA  | 3480 |
| GGGACTAAAT ATGTAGTCAT CCTAAGGCGC ATAACCATTT ATAAAAATCA TCCTTCATTC  | 3540 |
| TATTTTACCC TATCATCCTC TGCAAGACAG TCCTCCCTCA AACCACAAG CCTTCTGTCC   | 3600 |
| TCACAGTCCC CTGGGCCATG GATCCTCACA TCCCAATCCG CGGCCGCAAT TCGTAATCAT  | 3660 |
| GGTCATAGCT GTTTCCTGTG TGAAATTGTT ATCCGCTCAC AATTCCACAC AACATACGAG  | 3720 |
| CCGGAAGCAT AAAGTGTAAG GCCTGGGGTG CCTAATGAGT GAGCTAACTC ACATTAATTG  | 3780 |
| CGTTGCGCTC ACTGCCCGCT TTCCAGTCGG GAAACCTGTC GTGCCAGCTG CATTAATGAA  | 3840 |
| TCGGCCAACG CGCGGGGAGA GGCGGTTTGC GTATTGGGCG C                      | 3881 |

## (2) INFORMATION FOR SEQ ID NO:218:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4723 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:218:

|   |     |
|---|-----|
| GAACTCGAGC AGCTGAAGCT TTCTGGGGCA GGCCAGGCCT GACCTTGGCT TTGGGGCAGG | 60  |
| GAGGGGGCTA AGGTGAGGCA GGTGGCGCCA GCCAGGTGCA CACCCAATGC CCATGAGCCC | 120 |

|            |             |             |            |            |            |      |
|------------|-------------|-------------|------------|------------|------------|------|
| AGACACTGGA | CGCTGAACCT  | CGCGGACAGT  | TAAGAACCCA | GGGGCCTCTG | CGCCCTGGGC | 180  |
| CCAGCTCTGT | CCCACACCGC  | GGTCACATGG  | CACCACCTCT | CTTGACGCCT | CCACCAAGGG | 240  |
| CCCATCGGTC | TTCCCCCTGG  | CACCCTCCTC  | CAAGAGCACC | TCTGGGGGCA | CAGCGGCCCT | 300  |
| GGGCTGCCTG | GTCAAGGACT  | ACTTCCCCGA  | ACCGGTGACG | GTGTCGTGGA | ACTCAGGCGC | 360  |
| CCTGACCAGC | GGCGTGACA   | CCTTCCCCGGC | TGTCCTACAG | TCCTCAGGAC | TCTACTCCCT | 420  |
| CAGCAGCGTG | GTGACCGTGC  | CCTCCAGCAG  | CTTGGGCACC | CAGACCTACA | TCTGCAACGT | 480  |
| GAATCACAAG | CCCAGCAACA  | CCAAGGTGGA  | CAAGAAAGTT | GGTGAGAGGC | CAGCACAGGG | 540  |
| AGGGAGGGTG | TCTGCTGGAA  | GCCAGGCTCA  | GCGCTCCTGC | CTGGACGCAT | CCCGGCTATG | 600  |
| CAGCCCCAGT | CCAGGGCAGC  | AAGGCAGGCC  | CCGTCTGCCT | CTTCACCCGG | AGGCCTCTGC | 660  |
| CCGCCCCACT | CATGCTCAGG  | GAGAGGGTCT  | TCTGGCTTTT | TCCCCAGGCT | CTGGGCAGGC | 720  |
| ACAGGCTAGG | TGCCCCTAAC  | CCAGGCCCTG  | CACACAAAGG | GGCAGGTGCT | GGGCTCAGAC | 780  |
| CTGCCAAGAG | CCATATCCGG  | GAGGACCCTG  | CCCCTGACCT | AAGCCCACCC | CAAAGGCCAA | 840  |
| ACTCTCCACT | CCCTCAGCTC  | GGACACCTTC  | TCTCCTCCCA | GATTCCAGTA | ACTCCCAATC | 900  |
| TTCTCTCTGC | AGAGCCCAAA  | TCTTGTGACA  | AAACTCACAC | ATGCCACCG  | TGCCCAGGTA | 960  |
| AGCCAGCCCA | GGCCTCGCCC  | TCCAGCTCAA  | GGCGGGACAG | GTGCCCTAGA | GTAGCCTGCA | 1020 |
| TCCAGGGACA | GGCCCCAGCC  | GGGTGCTGAC  | ACGTCCACCT | CCATCTCTTC | CTCAGCACCT | 1080 |
| GAACTCCTGG | GGGGACCGTC  | AGTCTTCCTC  | TTCCCCCAA  | AACCCAAGGA | CACCCTCATG | 1140 |
| ATCTCCCGGA | CCCCTGAGGT  | CACATGCGTG  | GTGGTGGACG | TGAGCCACGA | AGACCCTGAG | 1200 |
| GTCAAGTTCA | ACTGGTACGT  | GGACGGCGTG  | GAGGTGCATA | ATGCCAAGAC | AAAGCCGCGG | 1260 |
| GAGGAGCAGT | ACAACAGCAC  | GTACCGTG TG | GTCAGCGTCC | TCACCGTCCT | GCACCAGGAC | 1320 |
| TGGCTGAATG | GCAAGGAGTA  | CAAGTGCAAG  | GTCTCCAACA | AAGCCCTCCC | AGCCCCCATC | 1380 |
| GAGAAAACCA | TCTCAAAGC   | CAAAGGTGGG  | ACCCGTGGGG | TGCGAGGGCC | ACATGGACAG | 1440 |
| AGGCCGGCTC | GGCCCCACCCT | CTGCCCTGAG  | AGTGACCGCT | GTACCAACCT | CTGTCCCTAC | 1500 |
| AGGGCAGCCC | CGAGAACCAC  | AGGTGTACAC  | CCTGCCCCCA | TCCCGGGATG | AGCTGACCAA | 1560 |
| GAACCAGGTC | AGCCTGACCT  | GCCTGGTCAA  | AGGCTTCTAT | CCCAGCGACA | TCGCCGTGGA | 1620 |
| GTGGGAGAGC | AATGGGCAGC  | CGGAGAACAA  | CTACAAGACC | ACGCCTCCCG | TGCTGGACTC | 1680 |
| CGACGGCTCC | TTCTTCCTCT  | ACAGCAAGCT  | CACCGTGGAC | AAGAGCAGGT | GGCAGCAGGG | 1740 |
| GAACGTCTTC | TCATGCTCCG  | TGATGCATGA  | GGCTCTGCAC | AACCACTACA | CGCAGAAGAG | 1800 |
| CCTCTCCCTG | TCTCCGGGTA  | AATGAGTGCG  | ACGGCCGGCA | AGCCCCCGCT | CCCCGGGCTC | 1860 |
| TCGCGGTGCG | ACGAGGATGC  | TTGGCACGTA  | CCCCCTGTAC | ATACTTCCCG | GGCGCCCAGC | 1920 |
| ATGGAAATAA | AGCACCCAGC  | GCTGCCCTGG  | GCCCCTGCGA | GACTGTGATG | GTTCTTTCCA | 1980 |

|            |             |             |            |            |            |      |
|------------|-------------|-------------|------------|------------|------------|------|
| CGGGTCAGGC | CGAGTCTGAG  | GCCTGAGTGG  | CATGAGGGAG | GCAGAGCGGG | TCCCCTGTC  | 2040 |
| CCCACACTGG | CCCAGGCTGT  | GCAGGTGTGC  | CTGGGCCCCC | TAGGGTGGGG | CTCAGCCAGG | 2100 |
| GGCTGCCCTC | GGCAGGGTGG  | GGGATTTGCC  | AGCGTGGCCC | TCCCTCCAGC | AGCACCTGCC | 2160 |
| CTGGGCTGGG | CCACGGGAAG  | CCCTAGGAGC  | CCCTGGGGAC | AGACACACAG | CCCCTGCCTC | 2220 |
| TGTAGGAGAC | TGTCCTGTTC  | TGTGAGCGCC  | CCTGTCCTCC | CGACCTCCAT | GCCCCTCGG  | 2280 |
| GGGCATGCCT | GCAGGTCGAC  | TCTAGAGGAT  | CCCCGGGTAC | CGAGCTCGAA | TTCATCGATG | 2340 |
| ATATCAGATC | TGCCGGTCTC  | CCTATAGTGA  | GTCGTATTAA | TTTCGATAAG | CCAGGTAAAC | 2400 |
| CTGCATTAAT | GAATCGGCCA  | ACGCGCGGGG  | AGAGGCGGTT | TGCGTATTGG | GCGCTCTTCC | 2460 |
| GCTTCCTCGC | TCACTGACTC  | GCTGCGCTCG  | GTCGTTCCGC | TGCGGCGAGC | GGTATCAGCT | 2520 |
| CACTCAAAGG | CGGTAATACG  | GTTATCCACA  | GAATCAGGGG | ATAACGCAGG | AAAGAACATG | 2580 |
| TGAGCAAAAG | GCCAGCAAAA  | GGCCAGGAAC  | CGTAAAAAGG | CCGCGTTGCT | GGCGTTTTTC | 2640 |
| CATAGGCTCC | GCCCCCTGA   | CGAGCATCAC  | AAAAATCGAC | GCTCAAGTCA | GAGGTGGCGA | 2700 |
| AACCCGACAG | GACTATAAAG  | ATACCAGGCG  | TTTCCCCCTG | GAAGCTCCCT | CGTGCGCTCT | 2760 |
| CCTGTTCCGA | CCCTGCCGCT  | TACCGGATAC  | CTGTCCGCCT | TTCTCCCTTC | GGGAAGCGTG | 2820 |
| GCGCTTTCTC | AATGCTCACG  | CTGTAGGTAT  | CTCAGTTCGG | TGTAGGTCGT | TCGCTCCAAG | 2880 |
| CTGGGCTGTG | TGCACGAACC  | CCCCGTTTCA  | CCCGACCGCT | GCGCCTTATC | CGGTAACTAT | 2940 |
| CGTCTTGAGT | CCAACCCGGT  | AAGACACGAC  | TTATCGCCAC | TGGCAGCAGC | CACTGGTAAC | 3000 |
| AGGATTAGCA | GAGCGAGGTA  | TGTAGGCGGT  | GCTACAGAGT | TCTTGAAGTG | GTGGCCTAAC | 3060 |
| TACGGCTACA | CTAGAAGGAC  | AGTATTTGGT  | ATCTGCGCTC | TGCTGAAGCC | AGTTACCTTC | 3120 |
| GGAAAAAGAG | TTGGTAGCTC  | TTGATCCGGC  | AAACAAACCA | CCGCTGGTAG | CGGTGGTTTT | 3180 |
| TTTGTTTGCA | AGCAGCAGAT  | TACGCGCAGA  | AAAAAAGGAT | CTCAAGAAGA | TCCTTTGATC | 3240 |
| TTTTCTACGG | GGTCTGACGC  | TCAGTGGAAC  | GAAAACTCAC | GTTAAGGGAT | TTTGGTCATG | 3300 |
| AGATTATCAA | AAAGGATCTT  | CACCTAGATC  | CTTTTAAATT | AAAAATGAAG | TTTTAAATCA | 3360 |
| ATCTAAAGTA | TATATGAGTA  | AACTTGGTCT  | GACAGTTACC | AATGCTTAAT | CAGTGAGGCA | 3420 |
| CCTATCTCAG | CGATCTGTCT  | ATTTTCGTTCA | TCCATAGTTG | CCTGACTCCC | CGTCGTGTAG | 3480 |
| ATAACTACGA | TACGGGAGGG  | CTTACCATCT  | GGCCCCAGTG | CTGCAATGAT | ACCGCGAGAC | 3540 |
| CCACGCTCAC | CGGCTCCAGA  | TTTATCAGCA  | ATAAACCAGC | CAGCCGGAAG | GGCCGAGCGC | 3600 |
| AGAAGTGGTC | CTGCAACTTT  | ATCCGCCTCC  | ATCCAGTCTA | TTAATTGTTG | CCGGGAAGCT | 3660 |
| AGAGTAAGTA | GTTTCGCCAGT | TAATAGTTTG  | CGCAACGTTG | TTGCCATTGC | TACAGGCATC | 3720 |
| GTGGTGTCAC | GCTCGTCGTT  | TGGTATGGCT  | TCATTCAGCT | CCGGTTCCCA | ACGATCAAGG | 3780 |



|             |            |            |            |             |            |      |
|-------------|------------|------------|------------|-------------|------------|------|
| CGAGTTACAT  | GATCCCCCAT | GTTGTGCAAA | AAAGCGGTTA | GCTCCTTCGG  | TCCTCCGATC | 3840 |
| GTTGTGAGAA  | GTAAGTTGGC | CGCAGTGTTA | TCACTCATGG | TTATGGCAGC  | ACTGCATAAT | 3900 |
| TCTCTTACTG  | TCATGCCATC | CGTAAGATGC | TTTTCTGTGA | CTGGTGAGTA  | CTCAACCAAG | 3960 |
| TCATTCTGAG  | AATAGTGTAT | GCGGCGACCG | AGTTGCTCTT | GCCC GGCGTC | AATACGGGAT | 4020 |
| AATACCGCGC  | CACATAGCAG | AACTTTAAAA | GTGCTCATCA | TTGGAAAACG  | TTCTTCGGGG | 4080 |
| CGAAAACCTCT | CAAGGATCTT | ACCGCTGTTG | AGATCCAGTT | CGATGTAACC  | CACTCGTGCA | 4140 |
| CCCAACTGAT  | CTTCAGCATC | TTTTACTTTC | ACCAGCGTTT | CTGGGTGAGC  | AAAAACAGGA | 4200 |
| AGGC AAAATG | CCGCAAAAAA | GGAATAAGG  | GCGACACGGA | AATGTTGAAT  | ACTCATACTC | 4260 |
| TTCTTTTTTC  | AATATTATTG | AAGCATTTAT | CAGGGTTATT | GTCTCATGAG  | CGGATACATA | 4320 |
| TTTGAATGTA  | TTTAGAAAAA | TAAACAAATA | GGGGTTCCGC | GCACATTTCC  | CCGAAAAGTG | 4380 |
| CCACCTGACG  | TCTAAGAAAC | CATTATTATC | ATGACATTAA | CCTATAAAAA  | TAGGCGTATC | 4440 |
| ACGAGGCCCT  | TTCGTCTCGC | GCGTTTCGGT | GATGACGGTG | AAAACCTCTG  | ACACATGCAG | 4500 |
| CTCCCGGAGA  | CGGTCACAGC | TTGTCTGTAA | GCGGATGCCG | GGAGCAGACA  | AGCCCGTCAG | 4560 |
| GGCGCGTCAG  | CGGGTGTGG  | CGGGTGTCGG | GGCTGGCTTA | ACTATGCGGC  | ATCAGAGCAG | 4620 |
| ATTGTACTGA  | GAGTGCACCA | TATGGACATA | TTGTCGTTAG | AACGCGGCTA  | CAATTAATAC | 4680 |
| ATAACCTTAT  | GTATCATACA | CATACGATTT | AGGTGACACT | ATA         |            | 4723 |

## (2) INFORMATION FOR SEQ ID NO:219:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 524 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:219:

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| AAGCTTGCCA | CCATGAAACA | CCTGTGGTTC | TTCTCCTCC  | TGGTGGCAGC | TCCTAGATGG | 60  |
| GTCCTGTCTC | AGGTGCAGCT | ACAGCAGTGG | GGCGCAGGAC | TGTTGAAGCC | TTCGGAGACC | 120 |
| CTGTCCCTCA | CCTGCGCTGT | CTATGGTGGT | TCCTTCAGTG | GTTACTACTG | GAGCTGGATC | 180 |
| CGCCAGCCAC | CAGGTAAGGG | TCTGGAGTGG | ATTGGTGAAA | TCAATCATAG | TGGAAGCACC | 240 |
| AACTACAACC | CGTCTCTCAA | GAGTCGAGTC | ACCATATCAG | TAGACACGTC | CAAGAACCAG | 300 |
| TTCTCTCTGA | AACTGAGCTC | TGTGACCGCT | GCGGACACGG | CTGTGTATTA | CTGTGCGAGA | 360 |
| GTAATTAATT | GGTTCGACCC | TTGGGGCCAG | GGAACCCTGG | TCACCGTCTC | CTCAGCCTCA | 420 |
| ACCAAGGGCC | CATCGGTCTT | CCCCCTGGCA | CCCTCCTCCA | AGAGCACCTC | TGGGGGCACA | 480 |

GCGGCCCTGG GCTGCCTGGT CAAGGACTAC TTCCCCGAAC CGGT

524

(2) INFORMATION FOR SEQ ID NO:220:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 420 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:220:

|  |     |
|--|-----|
| AAGCTTGCCA CCATGATGGT CCCAGCTCAG CTCCTCGGTC TCCTGCTGCT CTGGTTCCCA  | 60  |
| GGTTCCAGAT GCGACATCCA GATGACCCAG TCTCCATCTT CCGTGTCTGC ATCTGTAGGA  | 120 |
| GACAGAGTCA CCATCACTTG TCGGGCGAGT CAGGATATTA GCAGCTGGTT AGCCTGGTAT  | 180 |
| CAGCATAAAC CAGGTAAAGC ACCTAAGCTC CTGATCTATG CTGCATCCAG TTTGCAAAGT  | 240 |
| GGTGTCCCAT CAAGGTTTCAG CGGAAGTGGG TCTGGGACAG ATTTCACTCT CACCATCAGC | 300 |
| AGCCTGCAGC CTGAAGATTT TGCAACTTAC TATTGTCAAC AGGCTAATAG TTTCCCGTAC  | 360 |
| ACTTTTGGTC AGGGAACCAA GCTGGAGATC AAACGAACTG TGGCTGCACC ATCTGTCTTC  | 420 |

(2) INFORMATION FOR SEQ ID NO:221:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:221:

ATGGTCCCAG CTCAGCTCCT CGGTCTCCTG CTGCTCTGGT TCCC

44

(2) INFORMATION FOR SEQ ID NO:222:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:222:

AGGTTCCAGA TGCGACATCC AGATGACCCA GTCTCCATCT TCCG

44

(2) INFORMATION FOR SEQ ID NO:223:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:223:

TGTCTGCATC TGTAGGAGAC AGAGTCACCA TCACTTGTCG GGCG

44

(2) INFORMATION FOR SEQ ID NO:224:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:224:

AGTCAGGATA TTAGCAGCTG GTTAGCCTGG TATCAGCATA AACC

44

(2) INFORMATION FOR SEQ ID NO:225:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:225:

AGGTAAAGCA CCTAAGCTCC TGATCTATGC TGCATCCAGT TTGC

44

(2) INFORMATION FOR SEQ ID NO:226:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:226:  
AGGAGCTTAG GTGCTTTACC TGGTTTATGC TGATACCAGG CTAA 44
- (2) INFORMATION FOR SEQ ID NO:227:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 44 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:227:  
CCAGCTGCTA ATATCCTGAC TCGCCCGACA AGTGATGGTG ACTC 44
- (2) INFORMATION FOR SEQ ID NO:228:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 44 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:228:  
TGTCTCCTAC AGATGCAGAC ACGGAAGATG GAGACTGGGT CATC 44
- (2) INFORMATION FOR SEQ ID NO:229:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 44 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:229:  
TGGATGTCGC ATCTGGAACC TGGGAACCAG AGCAGCAGGA GACC 44
- (2) INFORMATION FOR SEQ ID NO:230:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 42 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:230:

GAGGAGCTGA GCTGGGACCA TCATGGTGGC AAGCTTAGAG TC

42

(2) INFORMATION FOR SEQ ID NO:231:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:231:

GACTCTAAGC TTGCCACCAT GATGGTCC

28

(2) INFORMATION FOR SEQ ID NO:232:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:232:

ACCTTGATGG GACACCACTT TGCAAACCTGG ATGCAGCATA GATC

44

(2) INFORMATION FOR SEQ ID NO:233:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:233:

AAAGTGGTGT CCCATCAAGG TTCAGCGGAA GTGGATCTGG GACA

44

(2) INFORMATION FOR SEQ ID NO:234:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:234:

GATTTCACTC TCACCATCAG CAGCCTGCAG CCTGAAGATT TTGC

44

(2) INFORMATION FOR SEQ ID NO:235:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:235:

AACTTACTAT TGTCAACAGG CTAATAGTTT CCCGTACACT TTTG

44

(2) INFORMATION FOR SEQ ID NO:236:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:236:

GTCAGGGAAC CAAGCTGGAG ATCAAACGAA CTGTGGCTGC ACCA

44

(2) INFORMATION FOR SEQ ID NO:237:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 37 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:237:

TCTGTCTTCA TCTTCCCGCC ATCTGATGAG CAGTTGA

37

(2) INFORMATION FOR SEQ ID NO:238:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 40 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:238:

GGGAAGATGA AGACAGATGG TGCAGCCACA GTTCGTTTGA

40

(2) INFORMATION FOR SEQ ID NO:239:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:239:

TCTCCAGCTT GGTTCCTGA CCAAAGTGT ACGGGAACT ATTA

44

(2) INFORMATION FOR SEQ ID NO:240:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:240:

GCCTGTTGAC AATAGTAAGT TGCAAAATCT TCAGGCTGCA GGCT

44

(2) INFORMATION FOR SEQ ID NO:241:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 44 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:241:

GCTGATGGTG AGAGTGAAAT CTGTCCCAGA TCCACTTCCG CTGA

44

## (2) INFORMATION FOR SEQ ID NO:242:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:242:

TCAACTGCTC ATCAGATGGC

20

## (2) INFORMATION FOR SEQ ID NO:243:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 3819 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:243:

|  |     |
|--|-----|
| TCTTCCGCTT CCTCGCTCAC TGA  | 60  |
| CTCGCTG TCGGCTGCG GCGAGCGGTA                                       |     |
| TCAGCTCACT CAAAGGCGGT AATACGGTTA TCCACAGAAT CAGGGGATAA CGCAGGAAAG  | 120 |
| AACATGTGAG CAAAAGGCCA GCAAAGGCC AGGAACCGTA AAAAGGCCGC GTTGCTGGCG   | 180 |
| TTTTTCCATA GGCTCCGCCC CCCTGACGAG CATCACAAAA ATCGACGCTC AAGTCAGAGG  | 240 |
| TGGCGAAACC CGACAGGACT ATAAAGATAC CAGGCGTTTC CCCCTGGAAG CTCCCTCGTG  | 300 |
| CGCTCTCCTG TTCCGACCCT GCCGCTTACC GGATACCTGT CCGCCTTTCT CCCTTCGGGA  | 360 |
| AGCGTGGCGC TTTCTCATAG CTCACGCTGT AGGTATCTCA GTTCGGTGTA GGTCGTTTCG  | 420 |
| TCCAAGCTGG GCTGTGTGCA CGAACCCCC GTTCAGCCCG ACCGCTGCGC CTTATCCGGT   | 480 |
| AACTATCGTC TTGAGTCCAA CCCGGTAAGA CACGACTTAT CGCCACTGGC AGCAGCCACT  | 540 |
| GGTAACAGGA TTAGCAGAGC GAGGTATGTA GGCGGTGCTA CAGAGTTCTT GAAGTGGTGG  | 600 |
| CCTAACTACG GCTACACTAG AAGGACAGTA TTTGGTATCT GCGCTCTGCT GAAGCCAGTT  | 660 |
| ACCTTCGGAA AAAGAGTTGG TAGCTCTTGA TCCGGCAAAC AAACCACCGC TGGTAGCGGT  | 720 |
| GGTTTTTTTTG TTTGCAAGCA GCAGATTACG CGCAGAAAAA AAGGATCTCA AGAAGATCCT | 780 |
| TTGATCTTTT CTACGGGGTC TGACGCTCAG TGGAACGAAA ACTCACGTTA AGGGATTTTG  | 840 |
| GTCATGAGAT TATCAAAAAG GATCTTCACC TAGATCCTTT TAAATTAAAA ATGAAGTTTT  | 900 |



|            |             |            |            |             |             |      |
|------------|-------------|------------|------------|-------------|-------------|------|
| AAATCAATCT | AAAGTATATA  | TGAGTAAACT | TGGTCTGACA | GTTACCAATG  | CTTAATCAGT  | 960  |
| GAGGCACCTA | TCTCAGCGAT  | CTGTCTATTT | CGTTCATCCA | TAGTTGCCTG  | ACTCCCCGTC  | 1020 |
| GTGTAGATAA | CTACGATACG  | GGAGGGCTTA | CCATCTGGCC | CCAGTGCTGC  | AATGATACCG  | 1080 |
| CGAGACCCAC | GCTCACCGGC  | TCCAGATTTA | TCAGCAATAA | ACCAGCCAGC  | CGGAAGGGCC  | 1140 |
| GAGCGCAGAA | GTGGTCCTGC  | AACTTTATCC | GCCTCCATCC | AGTCTATTAA  | TTGTTGCCGG  | 1200 |
| GAAGCTAGAG | TAAGTAGTTC  | GCCAGTTAAT | AGTTTGCGCA | ACGTTGTTGC  | CATTGCTACA  | 1260 |
| GGCATCGTGG | TGTCACGCTC  | GTCGTTTGGT | ATGGCTTCAT | TCAGCTCCGG  | TTCCCAACGA  | 1320 |
| TCAAGGCGAG | TTACATGATC  | CCCCATGTTG | TGCAAAAAAG | CGGTTAGCTC  | CTTCGGTCCCT | 1380 |
| CCGATCGTTG | TCAGAAGTAA  | GTTGGCCGCA | GTGTTATCAC | TCATGGTTAT  | GGCAGCACTG  | 1440 |
| CATAATTCTC | TTACTGTCAT  | GCCATCCGTA | AGATGCTTTT | CTGTGACTGG  | TGAGTACTCA  | 1500 |
| ACCAAGTCAT | TCTGAGAATA  | GTGTATGCGG | CGACCGAGTT | GCTCTTGCCC  | GGCGTCAATA  | 1560 |
| CGGGATAATA | CCGCGCCACA  | TAGCAGAACT | TTAAAAGTGC | TCATCATTGG  | AAAACGTTCT  | 1620 |
| TCGGGGCGAA | AACTCTCAAG  | GATCTTACCG | CTGTTGAGAT | CCAGTTCGAT  | GTAACCCACT  | 1680 |
| CGTGCACCCA | ACTGATCTTC  | AGCATCTTTT | ACTTTCACCA | GCGTTTCTGG  | GTGAGCAAAA  | 1740 |
| ACAGGAAGGC | AAAATGCCGC  | AAAAAAGGGA | ATAAGGGCGA | CACGGAAATG  | TTGAATACTC  | 1800 |
| ATACTCTTCC | TTTTTCAATA  | TTATTGAAGC | ATTTATCAGG | GTTATTGTCT  | CATGAGCGGA  | 1860 |
| TACATATTTG | AATGTATTTA  | GAAAAATAAA | CAAATAGGGG | TTCCGCGCAC  | ATTTCCCCGA  | 1920 |
| AAAGTGCCAC | CTGACGTCTA  | AGAAACCATT | ATTATCATGA | CATTAACCTA  | TAAAAATAGG  | 1980 |
| CGTATCACGA | GGCCCTTTTCG | TCTCGCGCGT | TTCGGTGATG | ACGGTGAAAA  | CCTCTGACAC  | 2040 |
| ATGCAGCTCC | CGGAGACGGT  | CACAGCTTGT | CTGTAAGCGG | ATGCCGGGAG  | CAGACAAGCC  | 2100 |
| CGTCAGGGCG | CGTCAGCGGG  | TGTTGGCGGG | TGTCGGGGCT | GGCTTAACCTA | TGCGGCATCA  | 2160 |
| GAGCAGATTG | TACTGAGAGT  | GCACCATATG | CGGTGTGAAA | TACCGCACAG  | ATGCGTAAGG  | 2220 |
| AGAAAATACC | GCATCAGGCG  | CCATTGCGCA | TTCAGGCTGC | GCAACTGTTG  | GGAAGGGCGA  | 2280 |
| TCGGTGCGGG | CCTCTTCGCT  | ATTACGCCAG | CTGGCGAAAG | GGGGATGTGC  | TGCAAGGCGA  | 2340 |
| TTAAGTTGGG | TAACGCCAGG  | GTTTTCCCAG | TCACGACGTT | GTAAAACGAC  | GGCCAGTGCC  | 2400 |
| AAGCTAGCGG | CCGCGGTCCA  | ACCACCAATC | TCAAAGCTTG | CCACCATGAT  | GGTCCCAGCT  | 2460 |
| CAGCTCCTCG | GTCTCCTGCT  | GCTCTGGTTC | CCAGGTTCCA | GATGCGACAT  | CCAGATGACC  | 2520 |
| CAGTCTCCAT | CTTCCGTGTC  | TGCATCTGTA | GGAGACAGAG | TCACCATCAC  | TTGTCGGGCG  | 2580 |
| AGTCAGGATA | TTAGCAGCTG  | GTTAGCCTGG | TATCAGCATA | AACCAGGTAA  | AGCACCTAAG  | 2640 |
| CTCCTGATCT | ATGCTGCATC  | CAGTTTGCAA | AGTGGTGTCC | CATCAAGGTT  | CAGCGGAAGT  | 2700 |
| GGATCTGGGA | CAGATTTTAC  | TCTCACCATC | AGCAGCCTGC | AGCCTGAAGA  | TTTTGCAACT  | 2760 |

|  |      |
|--|------|
| TACTATTGTC AACAGGCTAA TAGTTTCCCG TACACTTTTG GTCAGGGAAC CAAGCTGGAG  | 2820 |
| ATCAAACGAA CTGTGGCTGC ACCATCTGTC TTCATCTTCC CGCCATCTGA TGAGCAGTTG  | 2880 |
| AAATCTGGAA CTGCCTCTGT TGTGTGCCTG CTGAATAACT TCTATCCCAG AGAGGCCAAA  | 2940 |
| GTACAGTGGA AGGTGGATAA CGCCCTCCAA TCGGGTAACT CCCAGGAGAG TGTCACAGAG  | 3000 |
| CAGGACAGCA AGGACAGCAC CTACAGCCTC AGCAGCACCC TGACGCTGAG CAAAGCAGAC  | 3060 |
| TACGAGAAAC ACAAAGTCTA CGCCTGCGAA GTCACCCATC AGGGCCTGAG CTCGCCCCTC  | 3120 |
| ACAAAGAGCT TCAACAGGGG AGAGTGTTAG AGGGAGAAGT GCCCCCACCT GCTCCTCAGT  | 3180 |
| TCCAGCCTGA CCCCCTCCCA TCCTTTGGCC TCTGACCCTT TTTCCACAGG GGACCTACCC  | 3240 |
| CTATTGCGGT CCTCCAGCTC ATCTTTCACC TCACCCCCCT CCTCCTCCTT GGCTTTAATT  | 3300 |
| ATGCTAATGT TGGAGGAGAA TGAATAAATA AAGTGAATCT TTGCACCTGT GGTTTCTCTC  | 3360 |
| TTTCCTCAAT TTAATAATTA TTATCTGTTG TTTACCAACT ACTCAATTTT TCTTATAAGG  | 3420 |
| GACTAAATAT GTAGTCATCC TAAGGCGCAT AACCATTTAT AAAAATCATC CTTCAATTCTA | 3480 |
| TTTTACCCTA TCATCCTCTG CAAGACAGTC CTCCCTCAAA CCCACAAGCC TTCTGTCCTC  | 3540 |
| ACAGTCCCCT GGGCCATGGA TCCTCACATC CCAATCCGCG GCCGCAATTC GTAATCATGG  | 3600 |
| TCATAGCTGT TTCCTGTGTG AAATTGTTAT CCGCTCACAA TTCCACACAA CATACGAGCC  | 3660 |
| GGAAGCATAA AGTGTAAGC CTGGGGTGCC TAATGAGTGA GCTAACTCAC ATTAATTGCG   | 3720 |
| TTGCGCTCAC TGCCCGCTTT CCAGTCGGGA AACCTGTCGT GCCAGCTGCA TTAATGAATC  | 3780 |
| GGCCAACGCG CGGGGAGAGG CGGTTTGCGT ATTGGGCGC                         | 3819 |

## (2) INFORMATION FOR SEQ ID NO:244:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:244:

TTCTTCCTCC TCCTGGTGGC AGCTCCTAGA TGGGTCCTGT CTC

43

## (2) INFORMATION FOR SEQ ID NO:245:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:245:

AGGTGCAGCT ACAGCAGTGG GGCGCAGGAC TGTGAAGCC TTC

43

(2) INFORMATION FOR SEQ ID NO:246:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 43 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:246:

GGAGACCCTG TCCCTCACCT GCGCTGTCTA TGGTGGTTCC TTC

43

(2) INFORMATION FOR SEQ ID NO:247:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 43 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:247:

AGTGGTTACT ACTGGAGCTG GATCCGCCAG CCACCAGGTA AGG

43

(2) INFORMATION FOR SEQ ID NO:248:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 43 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:248:

GTCTGGAGTG GATTGGTGAA ATCAATCATA GTGGAAGCAC CAA

43

(2) INFORMATION FOR SEQ ID NO:249:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 43 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:249:

TTCACCAATC CACTCCAGAC CCTTACCTGG TGGCTGGCGG ATC

43

(2) INFORMATION FOR SEQ ID NO:250:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:250:

CAGCTCCAGT AGTAACCACT GAAGGAACCA CCATAGACAG CGC

43

(2) INFORMATION FOR SEQ ID NO:251:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:251:

AGGTGAGGGA CAGGGTCTCC GAAGGCTTCA ACAGTCCTGC GCC

43

(2) INFORMATION FOR SEQ ID NO:252:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:252:

CCACTGCTGT AGCTGCACCT GAGACAGGAC CCATCTAGGA GCT

43

(2) INFORMATION FOR SEQ ID NO:253:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 48 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:253:

GCCACCAGGA GGAGGAAGAA CCACAGGTGT TTCATGGTGG CAAGCTTG

48

(2) INFORMATION FOR SEQ ID NO:254:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:254:

CATGAAACAC CTGTGGTTCT TCC

23

(2) INFORMATION FOR SEQ ID NO:255:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:255:

TCTTGAGAGA CGGGTTGTAG TTGGTGCTTC CACTATGATT GAT

43

(2) INFORMATION FOR SEQ ID NO:256:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:256:

CTACAACCCG TCTCTCAAGA GTCGAGTCAC CATATCAGTA GAC

43

## (2) INFORMATION FOR SEQ ID NO:257:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:257:

ACGTCCAAGA ACCAGTTCTC TCTGAAACTG AGCTCTGTGA CCG

43

## (2) INFORMATION FOR SEQ ID NO:258:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:258:

CTGCGGACAC GGCTGTGTAT TACTGTGCGA GAGTAATTAA TTG

43

## (2) INFORMATION FOR SEQ ID NO:259:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 43 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:259:

GTTCGACCCT TGGGGCCAGG GAACCCTGGT CACCGTCTCC TCA

43

## (2) INFORMATION FOR SEQ ID NO:260:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 38 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:260:

GCCTCAACCA AGGGCCCATC GGTCTTCCCC CTGGCACC

38

(2) INFORMATION FOR SEQ ID NO:261:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:261:

CGATGGGCCC TTGGTTGAGG CTGAGGAGAC GGTGACCAGG GTTC

44

(2) INFORMATION FOR SEQ ID NO:262:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 43 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:262:

CCTGGCCCCA AGGGTCGAAC CAATTAATTA CTCTCGCACA GTA

43

(2) INFORMATION FOR SEQ ID NO:263:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 43 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:263:

ATACACAGCC GTGTCCGCAG CGGTCACAGA GCTCAGTTTC AGA

43

(2) INFORMATION FOR SEQ ID NO:264:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 43 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:264:

GAGAACTGGT TCTTGGACGT GTCTACTGAT ATGGTGACTC GAC

43

(2) INFORMATION FOR SEQ ID NO:265:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:265:

GAAGCACCAA CTACAACCCG

20

(2) INFORMATION FOR SEQ ID NO:266:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:266:

GAGTTCCACG ACACCGTCAC C

21

(2) INFORMATION FOR SEQ ID NO:267:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:267:

GACCTCAAGC TTGCCACCAT GAAACACCTG TGG

33

(2) INFORMATION FOR SEQ ID NO:268:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4926 base pairs
- (B) TYPE: nucleic acid



(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:268:

|       |         |      |          |      |          |      |          |      |           |      |          |      |
|-------|---------|------|----------|------|----------|------|----------|------|-----------|------|----------|------|
| GAAC  | TCGAGC  | AGCT | GAAAGCT  | TGCC | ACCATG   | AAAC | ACCTGT   | GGTT | CTTCCT    | CCTC | CTGGTG   | 60   |
| GCAG  | CTCCTA  | GATG | GGGTCCT  | GTCT | CAGGTG   | CAGC | TACAGC   | AGTG | GGGCGC    | AGGA | CTGTTG   | 120  |
| AAGC  | CTTCGG  | AGAC | CCTGTC   | CCTC | ACCTGC   | GCTG | TCTATG   | GTGG | TCCTT     | CAGT | GGTTAC   | 180  |
| TACT  | GGAGCT  | GGAT | CCGCCA   | GCC  | ACCAGGT  | AAGG | GTCTGG   | AGTG | GATTGG    | TGAA | ATCAAT   | 240  |
| CATAG | TGGAA   | GCAC | CAACTA   | CAAC | CCGTCT   | CTCA | AAGAGTC  | GAGT | CACCAT    | ATCA | GTAGAC   | 300  |
| ACGT  | CCAAGA  | ACC  | AGTTCTC  | TCTG | AAACTG   | AGCT | CTGTGA   | CCGT | TGCGGA    | CACG | GCTGTG   | 360  |
| TATT  | ACTGTG  | CGAG | AGTAAT   | TAAT | TGGTTC   | GACC | CTTGGG   | GCC  | AGGGAAC   | CCTG | GTCACC   | 420  |
| GTCT  | CCTCAG  | CCTC | AAACAA   | GGG  | CCATCG   | GTCT | TCCCC    | TGG  | CACCCTC   | CTCA | AAGAGC   | 480  |
| ACCT  | CTGGGG  | GCAC | AGCGGC   | CCTG | GGCTGC   | CTGG | TCAAGG   | ACT  | ACTTCCC   | CGA  | ACCGGTG  | 540  |
| ACGG  | TGTCGT  | GGA  | ACTCAGG  | CGCC | CTGACC   | AGCG | GCGTGC   | AC   | ACCTTCCC  | GGCT | GTCTTA   | 600  |
| CAGT  | CCTCAG  | GACT | CTACTC   | CCTC | AGCAGC   | GTGG | TGACCG   | TGCC | CTCCAG    | CAGC | TGGGGC   | 660  |
| ACCC  | GACCT   | ACAT | CTGCAA   | CGT  | GAAATCAC | AAG  | CCCAGCA  | AC   | ACCAAGGT  | GGAC | AAGAAA   | 720  |
| GTTG  | GTGAGA  | GGCC | AGCACA   | GGG  | AGGGAGG  | GTGT | CTGTCTG  | GA   | AGCCAGGC  | TCAG | CGCTCC   | 780  |
| TGC   | CTGGACG | CAT  | CCCGGCT  | ATG  | CAGCCCC  | AGT  | CCAGGGC  | AG   | CAAGGCAG  | GCCC | CGTCTG   | 840  |
| CCT   | CTTCACC | CGG  | AGGCCTC  | TG   | CCCGCCCC | ACT  | CATGCTC  | AG   | GGAGAGGG  | TCT  | TCTGGCT  | 900  |
| TTTT  | CCCCAG  | GCT  | CTGGGCA  | GGC  | ACAGGCT  | AGGT | GCCCCCT  | A    | ACCCAGGCC | CTG  | CACACAA  | 960  |
| AGGG  | GAGGT   | GCT  | GGGCTCA  | GAC  | CTGCCAA  | GAG  | CCATATC  | CG   | GGAGGACC  | CTG  | CCCCCTGA | 1020 |
| CCTA  | AGCCCA  | CCCC | AAAGGC   | CAA  | ACTCTCC  | ACT  | CCCTCAG  | CT   | CGGACACC  | TTCT | CTCCTC   | 1080 |
| CCAG  | ATTCCA  | GTA  | ACTCCA   | ATCT | TCTCTC   | TGC  | AGAGCCC  | AA   | ATCTTG    | ACAA | AACTCA   | 1140 |
| CAC   | ATGCCCA | CCGT | GCCCAG   | GTA  | AGCCAGC  | CC   | AGGCCTCG | CC   | CTCCAGCT  | CA   | AGGCGGGA | 1200 |
| CAGG  | TGCCCT  | AG   | AGTAGCCT | GC   | ATCCAGGG | AC   | AGGCCCCA | G    | CCGGGTGCT | GAC  | ACGTCCA  | 1260 |
| CCT   | CCATCTC | TT   | CCTCAGCA | CCT  | GAACTCC  | TG   | GGGGGACC | GT   | CAGTCTTC  | CT   | CTTCCCCC | 1320 |
| CAAA  | ACCCAA  | GG   | ACACCCTC | AT   | GATCTCCC | GG   | ACCCCTGA | GG   | TACATGC   | GT   | GGTGGTGG | 1380 |
| ACGT  | GAGCCA  | CGA  | AGACCCT  | GAG  | GTCAAGT  | TCA  | ACTGGTA  | CG   | TGGACGGC  | GT   | GGAGGTGC | 1440 |
| ATA   | ATGCCAA | GAC  | AAAGCCG  | CGG  | GAGGAGC  | AGT  | ACAACAG  | CAC  | GTACCGT   | GT   | GGTCAGCG | 1500 |
| TC    | CTACCGT | CCT  | GCAACCAG | GAC  | TGGCTGA  | AT   | GGCAAGGA | GT   | ACAAGTGC  | AAG  | GTCTCCA  | 1560 |
| ACAA  | AGCCCT  | CCC  | AGCCCCC  | AT   | CAGAAAA  | CC   | ATCTCCAA | AG   | CCAAAGGT  | GGG  | ACCCGTG  | 1620 |

|             |            |             |             |            |            |      |
|-------------|------------|-------------|-------------|------------|------------|------|
| GGGTGCGAGG  | GCCACATGGA | CAGAGGCCGG  | CTCGGCCCCAC | CCTCTGCCCT | GAGAGTGACC | 1680 |
| GCTGTACCAA  | CCTCTGTCCC | TACAGGGCAG  | CCCCGAGAAC  | CACAGGTGTA | CACCCTGCCC | 1740 |
| CCATCCCCGG  | ATGAGCTGAC | CAAGAACCAG  | GTCAGCCTGA  | CCTGCCTGGT | CAAAGGCTTC | 1800 |
| TATCCCAGCG  | ACATCGCCGT | GGAGTGGGAG  | AGCAATGGGC  | AGCCGGAGAA | CAACTACAAG | 1860 |
| ACCACGCCTC  | CCGTGCTGGA | CTCCGACGGC  | TCCTTCTTCC  | TCTACAGCAA | GCTCACCCTG | 1920 |
| GACAAGAGCA  | GGTGGCAGCA | GGGGAACGTC  | TTCTCATGCT  | CCGTGATGCA | TGAGGCTCTG | 1980 |
| CACAACCACT  | ACACGCAGAA | GAGCCTCTCC  | CTGTCTCCGG  | GTAAATGAGT | GCGACGGCCG | 2040 |
| GCAAGCCCCC  | GCTCCCCGGG | CTCTCGCGGT  | CGCACGAGGA  | TGCTTGGCAC | GTACCCCCTG | 2100 |
| TACATACTTC  | CCGGGCGCCC | AGCATGGAAA  | TAAAGCACCC  | AGCGCTGCCC | TGGGCCCCTG | 2160 |
| CGAGACTGTG  | ATGGTTCTTT | CCACGGGTCA  | GGCCGAGTCT  | GAGGCCTGAG | TGGCATGAGG | 2220 |
| GAGGCAGAGC  | GGGTCCCACT | GTCCCCACAC  | TGGCCCAGGC  | TGTGCAGGTG | TGCCTGGGCC | 2280 |
| CCCTAGGGTG  | GGGCTCAGCC | AGGGGCTGCC  | CTCGGCAGGG  | TGGGGGATTT | GCCAGCGTGG | 2340 |
| CCCTCCCTCC  | AGCAGCACCT | GCCCTGGGCT  | GGGCCACGGG  | AAGCCCTAGG | AGCCCCTGGG | 2400 |
| GACAGACACA  | CAGCCCCTGC | CTCTGTAGGA  | GACTGTCTTG  | TTCTGTGAGC | GGCCCTGTCC | 2460 |
| TCCCGACCTC  | CATGCCCACT | CGGGGGCATG  | CCTGCAGGTC  | GACTCTAGAG | GATCCCCGGG | 2520 |
| TACCGAGCTC  | GAATTCATCG | ATGATATCAG  | ATCTGCCGGT  | CTCCCTATAG | TGAGTCGTAT | 2580 |
| TAATTTTCGAT | AAGCCAGGTT | AACCTGCATT  | AATGAATCGG  | CCAACGCGCG | GGGAGAGGCG | 2640 |
| GTTTGCGTAT  | TGGGCGCTCT | TCCGCTTCCT  | CGCTCACTGA  | CTCGCTGCGC | TCGGTCGTTC | 2700 |
| GGCTGCGGCG  | AGCGGTATCA | GCTCACTCAA  | AGGCGGTAAT  | ACGGTTATCC | ACAGAATCAG | 2760 |
| GGGATAACGC  | AGGAAAGAAC | ATGTGAGCAA  | AAGGCCAGCA  | AAAGGCCAGG | AACCGTAAAA | 2820 |
| AGGCCGCGTT  | GCTGGCGTTT | TTCCATAGGC  | TCCGCCCCCC  | TGACGAGCAT | CACAAAAATC | 2880 |
| GACGCTCAAG  | TCAGAGGTGG | CGAAACCCGA  | CAGGACTATA  | AAGATACCAG | GCGTTTCCCC | 2940 |
| CTGGAAGCTC  | CCTCGTGCGC | TCTCCTGTTC  | CGACCCTGCC  | GCTTACCGGA | TACCTGTCCG | 3000 |
| CCTTTCTCCC  | TTCGGGAAGC | GTGGCGCTTT  | CTCAATGCTC  | ACGCTGTAGG | TATCTCAGTT | 3060 |
| CGGTGTAGGT  | CGTTCGCTCC | AAGCTGGGCT  | GTGTGCACGA  | ACCCCCGTT  | CAGCCCGACC | 3120 |
| GCTGCGCCTT  | ATCCGGTAAC | TATCGTCTTG  | AGTCCAACCC  | GGTAAGACAC | GACTTATCGC | 3180 |
| CACTGGCAGC  | AGCCACTGGT | AACAGGATTA  | GCAGAGCGAG  | GTATGTAGGC | GGTGCTACAG | 3240 |
| AGTTCTTGAA  | GTGGTGGCCT | AACTACGGCT  | ACACTAGAAG  | GACAGTATTT | GGTATCTGCG | 3300 |
| CTCTGCTGAA  | GCCAGTTACC | TTCGGA AAAA | GAGTTGGTAG  | CTCTTGATCC | GGCAAACAAA | 3360 |
| CCACCGCTGG  | TAGCGGTGGT | TTTTTTGTTT  | GCAAGCAGCA  | GATTACGCGC | AGAAAAAAG  | 3420 |

|            |            |            |            |            |            |      |
|------------|------------|------------|------------|------------|------------|------|
| GATCTCAAGA | AGATCCTTTG | ATCTTTTCTA | CGGGGTCTGA | CGCTCAGTGG | AACGAAAAC  | 3480 |
| CACGTTAAGG | GATTTTGGTC | ATGAGATTAT | CAAAAAGGAT | CTTCACCTAG | ATCCTTTTAA | 3540 |
| ATTAAAAATG | AAGTTTTTAA | TCAATCTAAA | GTATATATGA | GTAAACTTGG | TCTGACAGTT | 3600 |
| ACCAATGCTT | AATCAGTGAG | GCACCTATCT | CAGCGATCTG | TCTATTTTCG | TCATCCATAG | 3660 |
| TTGCCTGACT | CCCCGTCGTG | TAGATAACTA | CGATACGGGA | GGGCTTACCA | TCTGGCCCCA | 3720 |
| GTGCTGCAAT | GATACCGCGA | GACCCACGCT | CACCGGCTCC | AGATTTATCA | GCAATAAACC | 3780 |
| AGCCAGCCGG | AAGGGCCGAG | CGCAGAAGTG | GTCTTGCAAC | TTTATCCGCC | TCCATCCAGT | 3840 |
| CTATTAATTG | TTGCCGGGAA | GCTAGAGTAA | GTAGTTCGCC | AGTTAATAGT | TTGCGCAACG | 3900 |
| TTGTTGCCAT | TGCTACAGGC | ATCGTGGTGT | CACGCTCGTC | GTTTGGTATG | GCTTCATTCA | 3960 |
| GCTCCGGTTC | CCAACGATCA | AGGCGAGTTA | CATGATCCCC | CATGTTGTGC | AAAAAAGCGG | 4020 |
| TTAGCTCCTT | CGGTCCTCCG | ATCGTTGTCA | GAAGTAAGTT | GGCCGCAGTG | TTATCACTCA | 4080 |
| TGGTTATGGC | AGCACTGCAT | AATTCTCTTA | CTGTCAATGC | ATCCGTAAGA | TGCTTTTCTG | 4140 |
| TGACTGGTGA | GTACTCAACC | AAGTCATTCT | GAGAATAGTG | TATGCGGCGA | CCGAGTTGCT | 4200 |
| CTTGCCCGGC | GTCAATACGG | GATAATACCG | CGCCACATAG | CAGAACTTTA | AAAGTGCTCA | 4260 |
| TCATTGAAA  | ACGTTCTTCG | GGGCGAAAAC | TCTCAAGGAT | CTTACCGCTG | TTGAGATCCA | 4320 |
| GTTCGATGTA | ACCCACTCGT | GCACCCAACT | GATCTTCAGC | ATCTTTTACT | TTCACCAGCG | 4380 |
| TTTCTGGGTG | AGCAAAAACA | GGAAGGCAAA | ATGCCGCAAA | AAAGGGAATA | AGGGCGACAC | 4440 |
| GGAAATGTTG | AATACTCATA | CTCTTCCTTT | TTCAATATTA | TTGAAGCATT | TATCAGGGTT | 4500 |
| ATTGTCTCAT | GAGCGGATAC | ATATTTGAAT | GTATTTAGAA | AAATAAACAA | ATAGGGGTTC | 4560 |
| CGCGCACATT | TCCCCGAAAA | GTGCCACCTG | ACGTCTAAGA | AACCATTATT | ATCATGACAT | 4620 |
| TAACCTATAA | AAATAGGCGT | ATCACGAGGC | CCTTTCGTCT | CGCGCGTTTC | GGTGATGACG | 4680 |
| GTGAAAACCT | CTGACACATG | CAGCTCCCGG | AGACGGTCAC | AGCTTGTCTG | TAAGCGGATG | 4740 |
| CCGGGAGCAG | ACAAGCCCGT | CAGGGCGCGT | CAGCGGGTGT | TGGCGGGTGT | CGGGGCTGGC | 4800 |
| TTAACTATGC | GGCATCAGAG | CAGATTGTAC | TGAGAGTGCA | CCATATGGAC | ATATTGTCGT | 4860 |
| TAGAACGCGG | CTACAATTAA | TACATAACCT | TATGTATCAT | ACACATACGA | TTTAGGTGAC | 4920 |
| ACTATA     |            |            |            |            |            | 4926 |

## (2) INFORMATION FOR SEQ ID NO:269:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:269:

AGCTTTACCA GCTAC

15

(2) INFORMATION FOR SEQ ID NO:270:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:270:

TACTGGTACT TCGATCTC

18

(2) INFORMATION FOR SEQ ID NO:271:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:271:

CAGGGGGGGG ATAGGTACTT CGATCTC

27

(2) INFORMATION FOR SEQ ID NO:272:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:272:

GCTTTTGATA TC

12

(2) INFORMATION FOR SEQ ID NO:273:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:273:

CATTGGCTAA ATGGGGATGC TTTTGATATC

30

(2) INFORMATION FOR SEQ ID NO:274:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 45 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:274:

CGGGATTACG ATATTTTGAC TGGTTATTAT GCGGCTTTTG ATATC

45

(2) INFORMATION FOR SEQ ID NO:275:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:275:

TACTTTGACT AC

12

(2) INFORMATION FOR SEQ ID NO:276:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:276:

AGTTTTTCCG ACTAC

15

(2) INFORMATION FOR SEQ ID NO:277:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 50 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:277:

GGGTATTATT ATGATTCGGG GACTTATTAT AAGTCTACCC CTTTGACTAT

50

(2) INFORMATION FOR SEQ ID NO:278:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:278:

CTAACTGGCC TCTTTAACTA C

21

(2) INFORMATION FOR SEQ ID NO:279:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:279:

CATCTTTACT TTGACTAC

18

(2) INFORMATION FOR SEQ ID NO:280:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:280:

AGCTTTACCA GCCAA

15

## (2) INFORMATION FOR SEQ ID NO:281:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:281:

CAAGGGTTTG ACTAC

15

## (2) INFORMATION FOR SEQ ID NO:282:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:282:

AGTTTTAGCA GCTAC

15

## (2) INFORMATION FOR SEQ ID NO:283:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:283:

AGCTTTACCA ACTAC

15

## (2) INFORMATION FOR SEQ ID NO:284:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:284:  
CAAAC TTTTG ACTAC 15
- (2) INFORMATION FOR SEQ ID NO:285:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:285:  
CATGGTATAG CAGCAGCTGG TACGTGGTTC GACCCC 36
- (2) INFORMATION FOR SEQ ID NO:286:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:286:  
AGCTTTTCCA GTTAC 15
- (2) INFORMATION FOR SEQ ID NO:287:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:287:  
CAGGGCTACT TTGACTAC 18
- (2) INFORMATION FOR SEQ ID NO:288:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear



(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:288:

GCCGGGTATA CCAGCAGCTG GTTCTTTGAC TTC

33

(2) INFORMATION FOR SEQ ID NO:289:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:289:

AGCTTTCCCA TCTAC

15

(2) INFORMATION FOR SEQ ID NO:290:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:290:

GTGGTTCGGG GATTTATTAT TACTTTGAC TAC

33

(2) INFORMATION FOR SEQ ID NO:291:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:291:

AGCTTAACCA GTTAT

15

(2) INFORMATION FOR SEQ ID NO:292:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:292:

CAAAGGGGTA CTTTGACTAC

20

(2) INFORMATION FOR SEQ ID NO:293:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:293:

GGATCGTGGT ACTTTGACTA C •

21

(2) INFORMATION FOR SEQ ID NO:294:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:294:

AACTGGTTCG ACCCC

15

(2) INFORMATION FOR SEQ ID NO:295:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:295:

AACTTTACCA CCTAC

15

(2) INFORMATION FOR SEQ ID NO:296:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:296:

CTCCCAATG ACAGTTGGTT CGACCCC

27

(2) INFORMATION FOR SEQ ID NO:297:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 45 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:297:

CGGGGGTACT ATGGTTCGGG GAGTTATTAT AACTGGTTCG ACCCC

45

(2) INFORMATION FOR SEQ ID NO:298:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:298:

TACTACTACT ACTACGGTAT GGACGTC

27

(2) INFORMATION FOR SEQ ID NO:299:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:299:

AACTTTATCA CCTAC

15

## (2) INFORMATION FOR SEQ ID NO:300:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 45 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:300:

CATGAGCAGC TGGTACAGGG TTACTACTAC TACGGTATGG ACGTC

45

## (2) INFORMATION FOR SEQ ID NO:301:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:301:

ACCTTTACCA GTTAC

15

## (2) INFORMATION FOR SEQ ID NO:302:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 42 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:302:

GATATGGGGG GGGCCTCCTA CTTCTACTTC GGTATGGACG TC

42

## (2) INFORMATION FOR SEQ ID NO:303:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:303:

AGCTTTGCCA ACTAC

15

(2) INFORMATION FOR SEQ ID NO:304:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:304:

CACCACGACT ACTACGGTAT GGACGTC

27

(2) INFORMATION FOR SEQ ID NO:305:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:305:

CGCTACTACG GTATGGACGT C

21

(2) INFORMATION FOR SEQ ID NO:306:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 812 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: join(199..247, 419..714)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:306:

TTTTCTGGCC TGACAACCAG GGTGGCGCAG GATGCTCAGT GCAGAGAGGA AGAAGCAGGT

60

GGTCTCTGCA GCTGGAAGCT CAGCTCCCAC CCAGCTGCTT TGCATGTCCC TCCCAGCTGC

120

CCTACCTTCC AGAGCCCATATA TCAATGCCTG TGTCAGAGCC CTGGGGAGGA ACTGCTCAGT

180

[illegible]

(2) INFORMATION FOR SEQ ID NO:307:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 115 amino acids  
(B) TYPE: amino acid  
(D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:307:

Met Glu Ala Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro  
1 5 10 15

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 900 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ix) FEATURE:

- ```
(A) NAME/KEY: CDS
(B) LOCATION: join(180..228, 398..693)
```

|                                                                   |            |            |            |             |            |  |     |
|-------------------------------------------------------------------|------------|------------|------------|-------------|------------|--|-----|
| AGGGCGGCGC                                                        | AGATGCTCAG | TGCAGAGAGA | AGAAACAGGT | GGTCTCTGCA  | GCTGGAAGCT |  | 60  |
| CAGCTCCAC                                                         | CCCAGCTGCT | TTGCATGTCC | CTCCCAGCTG | CCCTACCTTC  | CAGAGCCCAT |  | 120 |
| ATCAATGCCT                                                        | GGGTCAGAGC | TCTGGGGAGG | AACTGCTCAG | TTAGGACCCA  | GACGGAACC  |  | 179 |
| ATG GAA GCC CCA GCG CAG CTT CTC TTC CTC CTG CTA CTC TGG CTC ACA G |            |            |            |             |            |  | 228 |
| Met Glu Ala Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Thr   |            |            |            |             |            |  |     |
| 1                                                                 | 5          |            | 10         |             | 15         |  |     |
| GTGAGGGGAA                                                        | TATGAGGTGT | CTTTGCACAT | CAGTGAAAAC | TCCTGCCACC  | TCTGCTCAGC |  | 288 |
| AAGAAATATA                                                        | ATTAAAATTC | AAAATAGATC | AACAATTTTG | GCTCTACTCA  | AAGACAGTGG |  | 348 |
| GTTTGATTTT                                                        | GATTACATGA | GTGCATTTCT | GTTTTATTTT | CAATTTTCTAG | AT ACC     |  | 402 |
|                                                                   |            |            |            |             | Asp Thr    |  |     |
| ACC GGA GAA ATT GTG TTG ACA CAG TCT CCA GCC ACC CTG TCT TTG TCT   |            |            |            |             |            |  | 450 |
| Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser   |            |            |            |             |            |  |     |
| 20                                                                | 25         |            | 30         |             |            |  |     |

[illegible]

(2) INFORMATION FOR SEQ ID NO:309:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 115 amino acids  
(B) TYPE: amino acid  
(D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:309:

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ala | Pro | Ala | Gln | Leu | Leu | Phe | Leu | Leu | Leu | Leu | Trp | Leu | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Asp | Thr | Thr | Gly | Glu | Ile | Val | Leu | Thr | Gln | Ser | Pro | Ala | Thr | Leu | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Ser | Pro | Gly | Glu | Arg | Ala | Thr | Leu | Ser | Cys | Arg | Ala | Ser | Gln | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Ser | Ser | Tyr | Leu | Ala | Trp | Tyr | Gln | Gln | Lys | Pro | Gly | Gln | Ala | Pro |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Arg | Leu | Leu | Ile | Tyr | Asp | Ala | Ser | Asn | Arg | Ala | Thr | Gly | Ile | Pro | Ala |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Arg | Phe | Ser | Gly | Ser | Gly | Pro | Gly | Thr | Asp | Phe | Thr | Leu | Thr | Ile | Ser |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |



Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser  
                   100                  105                  110  
 Asn Trp His  
                   115

## (2) INFORMATION FOR SEQ ID NO:310:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 900 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: join(116..164, 352..650)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:310:

```

CCGCCCCAGC TGCTTTGCAT GTCCCTCCCA GCCGCCCTGC AGTCCAGAGC CCATATCAAT      60
GCCTGGGTCA GAGCTCTGGA GAAGAGCTGC TCAGTTAGGA ACCCCAGAGG GAACC ATG      118
                                     Met
                                     1

GAA ACC CCA GCG CAG CTT CTC TTC CTC CTG CTA CTC TGG CTC CCA G      164
Glu Thr Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
               5                     10                     15

GTGAGGGGAA CATGGGATGG TTTTGCATGT CAGTGAAAAC CCTCTCAAGT CCTGTTACCT      224
GGCAACTCTG CTCAGTCAAT ACAATAATTA AAGCTCAATA TAAAGCAATA ATTCTGGCTC      284
TTCTGGGAAG ACAATGGGTT TGATTTAGAT TACATGGGTG ACTTTTCTGT TTTATTTCCA      344
ATCTCAG  AT ACC ACC GGA GAA ATT GTG TTG ACG CAG TCT CCA GGC ACC      392
        Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr
                20                     25                     30

CTG TCT TTG TCT CCA GGG GAA AGA GCC ACC CTC TCC TGC AGG GCC AGT      440
Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser
                35                     40                     45

CAG AGT GTT AGC AGC AGC TAC TTA GCC TGG TAC CAG CAG AAA CCT GGC      488
Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly
                50                     55                     60

CAG GCT CCC AGG CTC CTC ATC TAT GGT GCA TCC AGC AGG GCC ACT GGC      536
Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly
                65                     70                     75

ATC CCA GAC AGG TTC AGT GGC AGT GGG TCT GGG ACA GAC TTC ACT CTC      584
Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu
                80                     85                     90

```

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ACC ATC AGC AGA CTG GAG CCT GAA GAT TTT GCA GTG TAT TAC TGT CAG   | 632 |
| Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln   |     |
| 95 100 105 110                                                    |     |
| CAG TAT GGT AGC TCA CCT CCCACAGTGA TTCAGCTTGA AACAAAAACC          | 680 |
| Gln Tyr Gly Ser Ser Pro                                           |     |
| 115                                                               |     |
| TCTGCAAGAC CTTCATTGTT TACTAGATTA TACCAGCTGC TTCCTTTACA GATAGCTGCT | 740 |
| GCAATGACAA CTCAATTTAG CATCTCTCTC TGCTTGGGCA TTTTGGGGAT CTAAAAAAG  | 800 |
| TAATCCCTTG ATATATTTTT GACTCTGATT CCTGCATTTT TCCTCAGACC AAGATGGACA | 860 |
| GCCAGGTTTA AGCACAGTTT CACAGTAATG GCCACTGGAT                       | 900 |

## (2) INFORMATION FOR SEQ ID NO:311:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 116 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:311:

|                                                                 |  |
|-----------------------------------------------------------------|--|
| Met Glu Thr Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro |  |
| 1 5 10 15                                                       |  |
| Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser |  |
| 20 25 30                                                        |  |
| Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser |  |
| 35 40 45                                                        |  |
| Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala |  |
| 50 55 60                                                        |  |
| Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro |  |
| 65 70 75 80                                                     |  |
| Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile |  |
| 85 90 95                                                        |  |
| Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr |  |
| 100 105 110                                                     |  |
| Gly Ser Ser Pro                                                 |  |
| 115                                                             |  |

## (2) INFORMATION FOR SEQ ID NO:312:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 847 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: join(226..280, 406..701)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:312:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| AAACACATTC TCTGCAGACA AATTTGAGCT ACCTTGATCT TACCTGGACA GGTGGGGACA | 60  |
| CTGAGCTGGT GCTGAGTTAC TCAGATGCGC CAGCTCTGCA GCTGTGCCCA GCCTGCCCCA | 120 |
| TCCCCTGCTC ATTTGCATGT TCCCAGAGCA CAACCTCCTG CCCTGAAGCC TTATTAATAG | 180 |
| GCTGGTCAGA CTTTGTGCAG GAATCAGACC CAGTCAGGAC ACAGC ATG GAC ATG     | 234 |
| Met Asp Met                                                       |     |
| 1                                                                 |     |
| AGG GTC CTC GCT CAG CTC CTG GGG CTC CTG CTG CTC TGT TTC CCA G     | 280 |
| Arg Val Leu Ala Gln Leu Leu Gly Leu Leu Leu Leu Cys Phe Pro       |     |
| 5 10 15                                                           |     |
| GTAAGGATGG AGAACACTAG CAGTTTACTC AGCCCAGGGT GCTCAGTACT GCTTTACTAT | 340 |
| TCAGGGAAAT TCTCTTACAA CATGATTAAT TGTGTGGACA TTTGTTTTTA TGTTTCCAAT | 400 |
| CTCAG GT GCC AGA TGT GAC ATC CAG ATG ACC CAG TCT CCA TCC TCA      | 446 |
| Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser           |     |
| 20 25 30                                                          |     |
| CTG TCT GCA TCT GTA GGA GAC AGA GTC ACC ATC ACT TGT CGG GCG AGT   | 494 |
| Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser   |     |
| 35 40 45                                                          |     |
| CAG GGT ATT AGC AGC TGG TTA GCC TGG TAT CAG CAG AAA CCA GAG AAA   | 542 |
| Gln Gly Ile Ser Ser Trp Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys   |     |
| 50 55 60                                                          |     |
| GCC CCT AAG TCC CTG ATC TAT GCT GCA TCC AGT TTG CAA AGT GGG GTC   | 590 |
| Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val   |     |
| 65 70 75 80                                                       |     |
| CCA TCA AGG TTC AGC GGC AGT GGA TCT GGG ACA GAT TTC ACT CTC ACC   | 638 |
| Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr   |     |
| 85 90 95                                                          |     |
| ATC AGC AGC CTG CAG CCT GAA GAT TTT GCA ACT TAT TAC TGC CAA CAG   | 686 |
| Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln   |     |
| 100 105 110                                                       |     |
| TAT AAT AGT TAC CCA CCCACAGTGT TACACACCCA AACATAAACC CCCAGGGAAG   | 741 |
| Tyr Asn Ser Tyr Pro                                               |     |
| 115                                                               |     |
| CAGATGTGTG AGGCTGGGCT GCCCCAGCTG CTTCTCCTGA TGCCTCCATC AGCTGAGAGT | 801 |
| GTTCTCAGG TGCAGCCACA CTCTGATGGT GTTGGTAGAT GGGGAC                 | 847 |

## (2) INFORMATION FOR SEQ ID NO:313:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 117 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:313:

```

Met Asp Met Arg Val Leu Ala Gln Leu Leu Gly Leu Leu Leu Leu Cys
 1             5             10             15

Phe Pro Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
      20             25             30

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser
      35             40             45

Gln Gly Ile Ser Ser Trp Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys
      50             55             60

Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val
      65             70             75             80

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
      85             90             95

Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
      100            105            110

Tyr Asn Ser Tyr Pro
      115

```

## (2) INFORMATION FOR SEQ ID NO:314:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 134 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:314:

```

GCCTCGGACA CCGCCATGTA TTACTGTGTG AGACATTTAT GGTTCGGGGA GTTACGCGGT      60
GTGAACGTCT GGGGCCAAGG GACCACGGTC ACCGTCTCCT CAGCCAAAAC GACACCCCCA      120
TCTGTCTATC CACT                                     134

```

## (2) INFORMATION FOR SEQ ID NO:315:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 125 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:315:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GCCTCGGACA CCGCCATGTA TTACTGTGCG AGACACTGGG CATTGGATGC TCTTGATGTC | 60  |
| TGGGGCCAAG GGACAATGCT CACCGTCTCT TCAGCCAAAA CGACACCCCC ATCTGTCTAT | 120 |
| CCACT                                                             | 125 |

(2) INFORMATION FOR SEQ ID NO:316:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 122 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:316:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GCCTCGGACA CCGCCATGTA TTACTGTGCG AGAACTGGGG ATGATGCTTT TGATATCTGG | 60  |
| GGCCAAGGGA CAATGGTCAC CGTCTCTTCA GCCAAAACAA CACCCCCATC AGTCTATCCA | 120 |
| CT                                                                | 122 |

(2) INFORMATION FOR SEQ ID NO:317:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 122 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:317:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GACTCGGACA CCGCCATGTA TTACTGTGCG AGACAGGGGA GAGATGCTTT AGATATCTGG | 60  |
| GGCCAAGGGA CAATGGTCAC CGTCTCTTCA GCCAAAACAA CACCCCCATC AGTCTATCCA | 120 |
| CT                                                                | 122 |

(2) INFORMATION FOR SEQ ID NO:318:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 137 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:318:

```
GCCTCGGACA CCGCCATGTA TTATTGTGTG AGACATAGGG ACTATATTTT GGGGAGTTAT      60
TTTCCTGACT ACTGGGGCCA GGGAACCCTG GTCACCGTCT CCTCAGCCAA AACAACACCC      120
CCATCAGTCT ATCCACT                                     137
```

(2) INFORMATION FOR SEQ ID NO:319:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 116 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:319:

```
GCCTCGGACA CCGCCATGTA TTA CTGTGCG AGACATGGGT CTATGGATAT CTGGGGCCAA      60
GGGACAATGG TCACCGTCTC TTCAGCTACA ACAACAGCCC CATCTGTCTA TCCCTT          116
```

(2) INFORMATION FOR SEQ ID NO:320:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 128 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:320:

```
GCCTCGGACA CCGCCATGTA TTA CTGTGCG AGAGAGAGCG GTCACTGGGG ATCGTTTGAC      60
TATTGGGGCC AGGGAACCCT GGTCACCGTC TCCTCAGCTA CAACAACAGC CCCATCTGTC      120
TATCCCTT                                     128
```

(2) INFORMATION FOR SEQ ID NO:321:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 125 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:321:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GCCTCGGACA CCGCCATGTA TTACTGTGCG AGAAGGGACC CCCCTGATGC TTTTGATATC | 60  |
| TGGGGCCAAG GGACAATGGT CACCGTCTCT TCAGCTACAA CAACAGCCCC ATCTGTCTAT | 120 |
| CCCTT                                                             | 125 |

(2) INFORMATION FOR SEQ ID NO:322:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 131 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:322:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GCCTCGGACA CCGCCATGTA TTACTGTGCG AGACGGGGGC CTTACTACTA CTACGGTATG | 60  |
| GACGTCTGGG GCCAAGGGAC CACGGTCACC GTCTCCTCAG CTACAACAAC AGCCCCATCT | 120 |
| GTCTATCCCT T                                                      | 131 |

(2) INFORMATION FOR SEQ ID NO:323:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 1674 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:323:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| CGAGAGGGGC GGGGGGAAGA CTACTATCCC AGGCAGGTTT TAGGTTCCAG AGTCTGCGAG | 60  |
| AAATCCCACC ATCTACCCAC TGACACTCCC ACCAGTCCTG TGCAGTGATC CCGTGATAAT | 120 |
| CGGCTGCCTG ATTCACGATT ACTTCCCTTT CGGCACGATG AATGTGACCT GGGGAAAGAG | 180 |
| TGGGAAGGAT ATAACCACCG TGAAC TTCC ACCTGCCCTC GCCTCTGGGG GACGGTACAC | 240 |
| CATGAGCAGC CAGTTAACCC TGCCAGCTGT CGAGTGCCCA GAAGGAGAGT CCGTGAAATG | 300 |
| TTCCGTGCAA CATGACTCTA ACCCGTCCA AGAATTGGAT GTGAATTGCT CTGGTAAAGA  | 360 |
| ACGTTAGGGG GTCAGCTAGG GGTGGGATAA GTCCTACCTT ATCTAGATCC ATATATCCCT | 420 |

|             |            |            |            |            |            |      |
|-------------|------------|------------|------------|------------|------------|------|
| CTGATGCACA  | CCCTCACAGG | AATCCCTCAG | AAACCTCCAC | TATGGGGATT | GGGGGAAGGA | 480  |
| AGCGTAAACA  | GGTCTAGAAG | GAGCTGGAGG | CCTCAGAACA | TCCAGAAACG | GGGACAGCAA | 540  |
| AGGAGACAAG  | GAGAATATAC | TGATTTGCTA | GGACATCTTC | TGTTACAGGT | CCTACTCCTC | 600  |
| CTCCTCCTAT  | TACTATTCTT | TCCTGCCAGC | CCAGCCTGTC | ACTGCAGCGG | CCAGCTCTTG | 660  |
| AGGACCTGCT  | CCTGGGTTCA | GATGCCAGCA | TCACATGTAC | TCTGAATGGC | CTGAGAAATC | 720  |
| CTGAGGGAGC  | TGCTTTTACC | TGGGAGCCCT | CCACTGGGAA | GGATGCAGTG | CAGAAGAAAG | 780  |
| CTGCGCAGAA  | TTCCTGCGGC | TGCTACAGTG | TGTCCAGCGT | CCTGCCTGGC | TGTGCTGAGC | 840  |
| GCTGGAACAG  | TGGCGCATCA | TTCAAGTGCA | CAGTTACCCA | TCCTGAGTCT | GGCACCTTAA | 900  |
| CTGGCACAAAT | TGCCAAAGTC | ACAGGTGAGC | TCAGATGCAT | ACCAGGACAT | TGTATGACGT | 960  |
| TCCCTGCTCA  | CATGCCTGCT | TTCTTCCTAT | AATACAGATG | CTCAACTAAC | TGCTCATGTC | 1020 |
| CTTATATCAC  | AGAGGGAAAT | TGGAGCTATC | TGAGGAACTG | CCCAGAAGGG | AAGGGCAGAG | 1080 |
| GGGTCTTGCT  | CTCCTTGCTT | GAGCCATAAC | TCTTCTTTCT | ACCTTCCAGT | GAACACCTTC | 1140 |
| CCACCCCAGG  | TCCACCTGCT | ACCGCCGCCG | TCGGAGGAGC | TGGCCCTGAA | TGAGCTCTTG | 1200 |
| TCCCTGACAT  | GCCTGGTGCG | AGCTTTCAAC | CCTAAAGAAG | TGCTGGTGCG | ATGGCTGCAT | 1260 |
| GGAAATGAGG  | AGCTGTCCCC | AGAAAGCTAC | CTAGTGTTTG | AGCCCCTAAA | GGAGCCAGGC | 1320 |
| GAGGGAGCCA  | CCACCTACCT | GGTGACAAGC | GTGTTGCGTG | TATCAGCTGA | AACCTGGAAA | 1380 |
| CAGGGTGACC  | AGTACTCCTG | CATGGTGGGC | CACGAGGCCT | TGCCCATGAA | CTTCACCCAG | 1440 |
| AAGACCATCG  | ACCGTCTGTC | GGGTAAACCC | ACCAATGTCA | GCGTGTCTGT | GATCATGTCA | 1500 |
| GAGGGAGATG  | GCATCTGCTA | CTGAGCCACC | CTGCCTGTCC | CTACTCCTAG | AATAAACTCT | 1560 |
| GTGCTCATCC  | AAAGTATCCC | TGCACTTCCA | CCCAGTGCCT | GTCCACCACC | CTGGGGTCTA | 1620 |
| CGAAACACAG  | GGAGGGGTCA | GGGCCAGGG  | AGGGAGAAAT | ACCACCACCT | AAGC       | 1674 |

## (2) INFORMATION FOR SEQ ID NO:324:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 133 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:324:

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| GCCTCGGACA | CCGCCATGTA | TACTGTGTG  | AGACATTTAT | GGTTCGGGGA | GTTACGCGGT | 60  |
| GTGAACGTCT | GGGGCCAAGG | GACCACGGTC | ACCGTCTCCT | CAGCCAAAAC | GACACCCCCA | 120 |
| TCTGTCTATC | CAC        |            |            |            |            | 133 |



## (2) INFORMATION FOR SEQ ID NO:325:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 124 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:325:

```

GCCTCGGACA CCGCCATGTA TTACTGTGCG AGACACTGGG CATTGGATGC TCTTGATGTC      60
TGGGGCCAAG GGACAATGCT CACCGTCTCT TCAGCCAAAA CGACACCCCC ATCTGTCTAT      120
CCAC  124

```

## (2) INFORMATION FOR SEQ ID NO:326:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 121 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:326:

```

GCCTCGGACA CCGCCATGTA TTACTGTGCG AGAACTGGGG ATGATGCTTT TGATATCTGG      60
GGCCAAGGGA CAATGGTCAC CGTCTCTTCA GCCAAAACAA CACCCCCATC AGTCTATCCA      120
C  121

```

## (2) INFORMATION FOR SEQ ID NO:327:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 121 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:327:

```

GACTCGGACA CCGCCATGTA TTACTGTGCG AGACAGGGGA GAGATGCTTT AGATATCTGG      60
GGCCAAGGGA CAATGGTCAC CGTCTCTTCA GCCAAAACAA CACCCCCATC AGTCTATCCA      120
C  121

```

## (2) INFORMATION FOR SEQ ID NO:328:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 136 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:328:

```

GCCTCGGACA CCGCCATGTA TTATTGTGTG AGACATAGGG ACTATATTTC GGGGAGTTAT      60
TTTCCTGACT ACTGGGGCCA GGGAACCCTG GTCACCGTCT CCTCAGCCAA AACAAACACCC    120
CCATCAGTCT ATCCAC                                     136

```

## (2) INFORMATION FOR SEQ ID NO:329:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 115 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:329:

```

GCCTCGGACA CCGCCATGTA TTA CTGTGCG AGACATGGGT CTATGGATAT CTGGGGCCAA      60
GGGACAATGG TCACCGTCTC TTCAGCTACA ACAACAGCCC CATCTGTCTA TCCCT          115

```

## (2) INFORMATION FOR SEQ ID NO:330:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 127 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:330:

```

GCCTCGGACA CCGCCATGTA TTA CTGTGCG AGAGAGAGCG GTCACTGGGG ATCGTTTGAC      60
TATTGGGGCC AGGGAACCCT GGTCACCGTC TCCTCAGCTA CAACAACAGC CCCATCTGTC    120
TATCCCT                                     127

```

## (2) INFORMATION FOR SEQ ID NO:331:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 124 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:331:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GCCTCGGACA CCGCCATGTA TTACTGTGCG AGAAGGGACC CCCCTGATGC TTTTGATATC | 60  |
| TGGGGCCAAG GGACAATGGT CACCGTCTCT TCAGCTACAA CAACAGCCCC ATCTGTCTAT | 120 |
| CCCT                                                              | 124 |

(2) INFORMATION FOR SEQ ID NO:332:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 130 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:332:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GCCTCGGACA CCGCCATGTA TTACTGTGCG AGACGGGGGC CTTACTACTA CTACGGTATG | 60  |
| GACGTCTGGG GCCAAGGGAC CACGGTCACC GTCTCCTCAG CTACAACAAC AGCCCCATCT | 120 |
| GTCTATCCCT                                                        | 130 |

(2) INFORMATION FOR SEQ ID NO:333:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 246 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:333:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGA                                                            | 246 |

## (2) INFORMATION FOR SEQ ID NO:334:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 32 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:334:

TACTGGTACT TCGATCTCTG GGGCCGTGGC AC

32

## (2) INFORMATION FOR SEQ ID NO:335:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 293 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:335:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACAAG GGACTGGGGA GGACTGGTAC TTCGATCTCT GGGGCCGTGG CAC        | 293 |

## (2) INFORMATION FOR SEQ ID NO:336:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 290 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:336:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |

GCGAGACAGA AGGGGGGAAG GGGGTACTTC GATCTCTGGG GCCGTGGCAC

290

(2) INFORMATION FOR SEQ ID NO:337:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 287 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:337:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGAACTG GGTGGTACTG GTACTTCGAT CTCTGGGGCC GTGGCAC               | 287 |

(2) INFORMATION FOR SEQ ID NO:338:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:338:

|                              |    |
|------------------------------|----|
| GCTTTTGATA TCTGGGGCCA AGGGAC | 26 |
|------------------------------|----|

(2) INFORMATION FOR SEQ ID NO:339:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 293 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:339:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GCGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |

GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC 180  
 AGCACC GCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT 240  
 GCGAGACATG AAAGTGGGGA TCCGGGGGCT TTTGATATCT GGGGCCAAGG GAC 293

(2) INFORMATION FOR SEQ ID NO:340:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 26 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:340:

TACTTTGACT ACTGGGGCCA GGGAAC 26

(2) INFORMATION FOR SEQ ID NO:341:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 305 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:341:

TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG 60  
 GTGCGCCAGA TGCCCGGGA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT 120  
 GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC 180  
 AGCACC GCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT 240  
 GCGAGAACGG ATTACGATAT TTTGACTGGT TATTATAACC CTTTGTACTA CTGGGGCCAG 300  
 GGAAC 305

(2) INFORMATION FOR SEQ ID NO:342:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 284 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:342:

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG  | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT  | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC  | 180 |
| AGCACC GCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGTATAG CAGCAGCCCT TTTTACTAC TGGGGCCAGG GAAC                    | 284 |

## (2) INFORMATION FOR SEQ ID NO:343:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 290 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:343:

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG  | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT  | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC  | 180 |
| AGCACC GCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGATCTC TACTATGGTT CGGGGAGTTT GACTACTGGG GCCAGGGAAC             | 290 |

## (2) INFORMATION FOR SEQ ID NO:344:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 305 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:344:

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG  | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT  | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC  | 180 |
| AGCACC GCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACTCG ATTACGATAT TTTGACTGGT TATTATAACC CCTTTGACTA CTGGGGCCAG  | 300 |
| GGAAC                                                              | 305 |

## (2) INFORMATION FOR SEQ ID NO:345:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 305 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:345:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT  | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCGGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACTCG ATTACGATAT TTTGACTGGT TATTATAACC CCTTTGACTA CTGGGGCCAG | 300 |
| GGAAC                                                             | 305 |

## (2) INFORMATION FOR SEQ ID NO:346:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 293 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:346:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT  | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGCCCGT ATAGCAGCAG CTGGTACAGG TTTGACTACT GGGGCCAGGG AAC        | 293 |

## (2) INFORMATION FOR SEQ ID NO:347:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 41 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)



(xi) SEQUENCE DESCRIPTION: SEQ ID NO:347:

TACTACTACT ACTACGGTAT GGACGTCTGG GGCCAAGGGA C

41

(2) INFORMATION FOR SEQ ID NO:348:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 317 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:348:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGAGAGG GGGGGGTTTA TTACTATGGT TCGGGGAGTT ATTACTACTA CGGTATGGAC | 300 |
| GTCTGGGGCC AAGGGAC                                                | 317 |

(2) INFORMATION FOR SEQ ID NO:349:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 305 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:349:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGAGAGG GAACTGGGGA CCATTACTGC TACTACTACG GTATGGACGT CTGGGGCCAA | 300 |
| GGGAC                                                             | 305 |

(2) INFORMATION FOR SEQ ID NO:350:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:350:

TACTGGTACT TCGATCTCTG GGGCCGTGGC ACCCTGGTC

39

(2) INFORMATION FOR SEQ ID NO:351:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 303 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:351:

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTCG TCAGCTACTG GATCGGCTGG  | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT  | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC  | 180 |
| AGCACC GCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACAGG GACTGGGGAT CGGGGAATGG TACTTCGATC TCTGGGGCCG TGGCACCCCTG | 300 |
| GTC                                                                | 303 |

(2) INFORMATION FOR SEQ ID NO:352:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:352:

GCTTTTGATA TCTGGGGCCA AGGGACAATG GTC

33

(2) INFORMATION FOR SEQ ID NO:353:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 291 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:353:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACGGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGGTAAACT GGGATCGGGC TTTTGATATC TGGGGCCAAG GGACAATGGT C          | 291 |

(2) INFORMATION FOR SEQ ID NO:354:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:354:

|                                      |    |
|--------------------------------------|----|
| TACTTTGACT ACTGGGGCCA GGGAACCCTG GTC | 33 |
|--------------------------------------|----|

(2) INFORMATION FOR SEQ ID NO:355:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 297 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:355:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCGGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TACCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGTACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTTCTGT | 240 |
| GCGAGACATA AGGCGGGGAT CAACTACTTT GCCTACTGGG GCCAGGGAAC CCTGGTC    | 297 |

(2) INFORMATION FOR SEQ ID NO:356:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 297 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:356:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAACTTCA CCGGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TACCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGTACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTTCTGT | 240 |
| GCGAGACATA AGGCGGGGAT CAACTACTTT GCCTACTGGG GCCAGGGAAC CCTGGTC    | 297 |

(2) INFORMATION FOR SEQ ID NO:357:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 297 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:357:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAACTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCG TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGAGACT GGGGAGAAGG GTATTACTTT GACTACTGGG GCCAGGGAAC CCTGGTC    | 297 |

(2) INFORMATION FOR SEQ ID NO:358:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 282 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:358:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGTTTAA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGCA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |

GATACCAGAT ACAGCGCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC 180  
 AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT 240  
 GCGAGACAAC TGTTGACTA CTGGGGCCAG GGAACCCTGG TC 282

(2) INFORMATION FOR SEQ ID NO:359:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 312 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:359:

TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA TCAGCTACTG GATCGGCTGG 60  
 GTGCGCCAGA TGCCCGGGA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT 120  
 GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC 180  
 AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT 240  
 GCGAGACTGT ATTACTATGG TTCGGGGAGT TACCACAACT GGTTCGACCC CTGGGGCCAG 300  
 GGAACCCTGG TC 312

(2) INFORMATION FOR SEQ ID NO:360:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:360:

AACTGGTTCG ACCCCTGGGG CCAGGGAACC CTGGTC 36

(2) INFORMATION FOR SEQ ID NO:361:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 318 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:361:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGTTTCTGGA TACAACTTTG CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCACATATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AACACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACAGG GGTATTACTA TGGTTCGGCA AATTATTATA ACATTGGTT CGACCCCTGG  | 300 |
| GGCCAGGGAA CCCTGGTC                                               | 318 |

## (2) INFORMATION FOR SEQ ID NO:362:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 48 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:362:

|                                                      |    |
|------------------------------------------------------|----|
| TACTACTACT ACTACGGTAT GGACGTCTGG GGCCAAGGGA CCACGGTC | 48 |
|------------------------------------------------------|----|

## (2) INFORMATION FOR SEQ ID NO:363:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 297 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:363:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TATAGTTTTG CCAACTACGG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCC | 120 |
| GGTTCCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AACACCGCCT ACCTGCAATG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGCCCCCGG CGTACTACTA CTACGGTATG GACGTCTGGG GCCAAGGGAC CACGGTC    | 297 |

## (2) INFORMATION FOR SEQ ID NO:364:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 156 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:364:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTC                           | 156 |

(2) INFORMATION FOR SEQ ID NO:365:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 156 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:365:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGTTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTC                           | 156 |

(2) INFORMATION FOR SEQ ID NO:366:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 156 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:366:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA GCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTC                           | 156 |

(2) INFORMATION FOR SEQ ID NO:367:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 156 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:367:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAACTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTC                           | 156 |

(2) INFORMATION FOR SEQ ID NO:368:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 156 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:368:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCACCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTC                           | 156 |

(2) INFORMATION FOR SEQ ID NO:369:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 294 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:369:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGCTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCGAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTCGAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACAGG GGGGGGATAG GTACTTCGAT CTCTGGGGCC GTGGCACCTT GGTC       | 294 |

(2) INFORMATION FOR SEQ ID NO:370:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 297 base pairs



- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:370:

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG  | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGA CTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC  | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT  | 240 |
| GCGAGACATT GGCTAAATGG GGATGCTTTT GATATCTGGG GCCAAGGGAC AATGGTC     | 297 |

(2) INFORMATION FOR SEQ ID NO:371:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 312 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:371:

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG  | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGA CTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC  | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AGGGCCTCGG ACAGTGT CAT GTATTACTGT | 240 |
| GCGAGACGGG ATTACGATAT TTTGACTGGT TATTATGCGG CTTT TGATAT CTGGGGCCAA | 300 |
| GGGACAATGG TC                                                      | 312 |

(2) INFORMATION FOR SEQ ID NO:372:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 317 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:372:

|                                                                   |    |
|-------------------------------------------------------------------|----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGTTTTT CCGACTACTG GATCGGCTGG | 60 |
|-------------------------------------------------------------------|----|

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GACACCAGAT ACAGCCCGTC CTTCCAGGGC CAGGTCTCCA TCTCAGTCGA CAAGTCCATC | 180 |
| AACACCGCCT TCCTGCAGTG GAACACCCTG GAGGCTTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGAGGGT ATTATTATGA TTCGGGGACT TATTATAAGT CTACCCCTTT GACTATTGGG | 300 |
| GCCAGGGAAC CCTGGTC                                                | 317 |

## (2) INFORMATION FOR SEQ ID NO:373:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 288 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:373:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGTTTTT CCGACTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GACACCAGAT ACAGCCCGTC CTTCCAGGGC CAGGTCTCCA TCTCAGTCGA CAAGTCCATC | 180 |
| AACACCGCCT TCCTGCAGTG GAACACCCTG GAGGCTTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACTAA CTGGCCTCTT TAACTATTGG GGCCAGGGAA CCCTGGTC              | 288 |

## (2) INFORMATION FOR SEQ ID NO:374:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 285 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:374:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACATC TTTACTTTGA CTACTGGGGC CAGGGAACCC AGGTC                 | 285 |

## (2) INFORMATION FOR SEQ ID NO:375:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 282 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:375:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCCAATG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTGGCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGTACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACAAG GGTGTGACTA CTGGGGCCAG GGAACCCTGG TC                    | 282 |

(2) INFORMATION FOR SEQ ID NO:376:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 285 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:376:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGTTTTA GCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACATC TTTACTTTGA CTACTGGGGC CAGGGAACCC AGGTC                 | 285 |

(2) INFORMATION FOR SEQ ID NO:377:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 282 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:377:

|                                                                   |    |
|-------------------------------------------------------------------|----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAACTACTG GATCGGCTGG | 60 |
|-------------------------------------------------------------------|----|

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACAAA CTTTGTACTA CTGGGGCCAG GGAACCCTGG TC                    | 282 |

## (2) INFORMATION FOR SEQ ID NO:378:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 303 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:378:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG  | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGGACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACATG GTATAGCAGC AGCTGGTACG TGGTTGACC CCTGGGGCCA GGGAACCCTG  | 300 |
| GTC                                                               | 303 |

## (2) INFORMATION FOR SEQ ID NO:379:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 285 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:379:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAG GGGTCTGGA TACAGCTTTT CCAGTTACTG GATCGCCTGG  | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GAAACCAGAT ACAGTCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACAGG GCTACTTTGA CTACTGGGGC CAGGGAACCC TGGTC                 | 285 |

## (2) INFORMATION FOR SEQ ID NO:380:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 285 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:380:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGTACCGCCT ACCTGCAGTG GAGCAGCCTG AGGGCCTCGG ACACCGCCAT TTATTACTGT | 240 |
| GCGAGACATC TTTACTTTGA CTA CTGGGGC CAGGGAACCC AGGTC                | 285 |

(2) INFORMATION FOR SEQ ID NO:381:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 297 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:381:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGGCCCGGT ATACCAGCAG CTGGTTCTTT GACTTCTGGG GCCAGGGAAC CCTGGTC    | 297 |

(2) INFORMATION FOR SEQ ID NO:382:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 285 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:382:

|                                                                   |    |
|-------------------------------------------------------------------|----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60 |
|-------------------------------------------------------------------|----|

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATCGCTGT | 240 |
| GCGAGACATC TTTACTTTGA CTACTGGGGC CAGGGAACCC AGGTC                 | 285 |

## (2) INFORMATION FOR SEQ ID NO:383:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 300 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:383:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTC CCATCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGAGTGG TTCGGGGATT TATTATTTAC TTTGACTACT GGGGCCAGGG AACCTGGTC  | 300 |

## (2) INFORMATION FOR SEQ ID NO:384:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 287 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:384:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGTTTCTGGA TACAGCTTAA CCAGTTATTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACAAA GGGGTACTTT GACTACTGGG GCCAGGGAAC CCTGGTC               | 287 |

## (2) INFORMATION FOR SEQ ID NO:385:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 288 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:385:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGGGGAT CGTGGTACTT TGACTIONTGG GGCCAGGGAA CCCTGGTC             | 288 |

(2) INFORMATION FOR SEQ ID NO:386:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 294 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:386:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAACTTTA CCACCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCGTC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACTCC CCAATGACAG TTGGTTTCGAC CCCTGGGGCC AGGGAACCCT GGTC      | 294 |

(2) INFORMATION FOR SEQ ID NO:387:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 312 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:387:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACGGG GGTACTATGG TTCGGGGAGT TATTATAACT GGTTCGACCC CTGGGGCCAG | 300 |
| GGAACCCTGG TC                                                     | 312 |

## (2) INFORMATION FOR SEQ ID NO:388:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 312 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:388:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAACCTTA TCACCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TACCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACATG AGCAGCTGGT ACAGGGTTAC TACTACTACG GTATGGACGT CTGGGGCCAA | 300 |
| GGGACCACGG TC                                                     | 312 |

## (2) INFORMATION FOR SEQ ID NO:389:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 309 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:389:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACACCTTTA CCAGTTACTG GATCGCCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTATCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGAGATA TGGGGGGGGC CTCCTACTTC TACTTCGGTA TGGACGTCTG GGGCCAAGGG | 300 |
| ACCACGGTC                                                         | 309 |



## (2) INFORMATION FOR SEQ ID NO:390:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 294 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:390:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTG CCAACTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTTTCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGTC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAACTCCATC | 180 |
| AGCACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACACC ACGACTACTA CGGTATGGAC GTCTGGGGCC AAGGGACCAC GGTC       | 294 |

## (2) INFORMATION FOR SEQ ID NO:391:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 288 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:391:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCTCTGAAGA TCTCCTGTAA GGGTTCTGGA TACAGCTTTA CCAGCTACTG GATCGGCTGG | 60  |
| GTGCGCCAGA TGCCCGGGAA AGGCCTGGAG TGGATGGGGA TCATCTTTCC TGGTGACTCT | 120 |
| GATACCAGAT ACAGCCCGCC CTTCCAAGGC CAGGTCACCA TCTCAGCCGA CAAGTCCATC | 180 |
| AACACCGCCT ACCTGCAGTG GAGCAGCCTG AAGGCCTCGG ACACCGCCAT GTATTACTGT | 240 |
| GCGAGACGCT ACTACGGTAT GGACGTCTGG GGCCAAGGGA CCACGGTC              | 288 |

## (2) INFORMATION FOR SEQ ID NO:392:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 246 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:392:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAG TGGGTGGCAG TTATATCATA TGATGGAAGC | 120 |
| AATAAATACT ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGAGCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGA                                                            | 246 |

## (2) INFORMATION FOR SEQ ID NO:393:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 294 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:393:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAC TGGGTGGCAG TTATATCATA TGATGGAACC | 120 |
| AATAAATACG ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGATCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGAGAGT CTTCCGGCTG GTACTTCGAT TTCTGGGGCC GTGGCACCTT GGTC       | 294 |

## (2) INFORMATION FOR SEQ ID NO:394:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 294 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:394:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAC TGGGTGGCAG TTATATCATA TGATGGAACC | 120 |
| AATAAATACG ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGATCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGGAAGT CTTCCGGCTG GTACTTCGAT TTCTGGGGCC GTGGCACCTT GGTC       | 294 |

## (2) INFORMATION FOR SEQ ID NO:395:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 294 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:395:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA ATAAGTGTAC TATACACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAC TGGGTGGCAG TTATATCATA TGATGGAGCC | 120 |
| AATAAATACG ACGCAGAGTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG  | 180 |
| AACATGCTGT ATCCGCAAAT GAACAGCCTG AGATCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGAGAGT CCTCCGGCTG GACTTTCGAT CTTTGGGGCC GTGGCACCTT GGTC       | 294 |

(2) INFORMATION FOR SEQ ID NO:396:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 294 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:396:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA ATAAGTGTAC TATACACTGG | 60  |
| GTCCGCCAGG CCCCAGGCAA GGGGCTGGAC TGGGTGGCAG TTATATCATA TGATGGAGCC | 120 |
| AATAAATACG ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG GGATCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGCGAGT CCTCCGGCTC TTAATTCGAT CTCTGGGGCC GTGGCACCTT GGTC       | 294 |

(2) INFORMATION FOR SEQ ID NO:397:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 294 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:397:

|                                                                   |    |
|-------------------------------------------------------------------|----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG | 60 |
|-------------------------------------------------------------------|----|

GTCCGCCAGG CTCCAGGCAA GGGGCTGGAC TGGGTGGCAA TTATGTCATA TGATGGAACC 120  
 AATAAATTCG ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG 180  
 AACACGCTGT ATCTGCAAAT GAACAGCCTG AGATCTGAGG ACACGGCTGT GTATTACTGT 240  
 GCGAGAGAGT CTTCCGGCTG GTACTTCGAT CTCTGGGGCC GTGGCACCCCT GGTC 294

(2) INFORMATION FOR SEQ ID NO:398:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 294 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:398:

TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA ATAAGTGTAC TCTACACTGG 60  
 GTCCGCCAGG CTCCAGGCAA GGGGCTGGAC TGGGTGTCAG TTATATCATA TGATGGAGCC 120  
 AATAAATACG ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG 180  
 AACACGCTGT ATCTGCAAAT GAACAGCCTG AGATCTGAGG ACACGGCTGT GTATTACTGT 240  
 GCGAGAGAGT CTTCCGGCTG GTACTTCGAT CTCTGGGGCC GTGGCACCCCT GGTC 294

(2) INFORMATION FOR SEQ ID NO:399:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 294 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:399:

TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG 60  
 GTCCGCCAGG CTCCAGGCAA GGGGCTGGAC TGGGTGGCAG TTTTTCATA TGATGGAACC 120  
 AATAAATACG ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG 180  
 AACACGCTGT ATCTGCAAAT GAACAGCCTG AGATCTGAGG ACACGGCTGT TTATTACTGT 240  
 GCGAGAGAGT CTTCCGGCTG GTACTTCGAT TTCTGGGGCC GTGGCACCCCT GGTC 294

(2) INFORMATION FOR SEQ ID NO:400:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 294 base pairs

(B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:400:

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAACCTATAC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAC TGGGTGGCAG TTTTTCATA TGATGGAACC   | 120 |
| AATAAATACG ACGCAGACTC CGTGAAGGGC CGATTCACCA TCTCCAGAGA CAATTCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGATCTGAGG ACACGGCTGT TTATTACTGT  | 240 |
| GCGAGAGAGT CTTCCGGCTG GTACTTCGAT TTCTGGGGCC GTGGCACCTT GGTC        | 294 |

(2) INFORMATION FOR SEQ ID NO:401:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 294 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:401:

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA ATAACCTGTAC TATACACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAC TGGGTGGCAG TTATATCATA TGATGGAGCC  | 120 |
| AATAAATACG ACGCAGACTC CGTGAAGGGC CGATTCACCA TCTCCAGAGA CAAATCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAGCAGCCTG AGATCTGAAG ACACGGCTGT ATATTACTGT  | 240 |
| GTGAGAGAGT CCTCCGGCTG GTACTTCGAT CTCTGGGGCC GTGGCACCTT GGTC        | 294 |

(2) INFORMATION FOR SEQ ID NO:402:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 294 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:402:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAG TGGGTGGCAG TTATATCATA TGATGGAAGC | 120 |

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| AATAAATACT ACGCAGACTC CGTGAAGGGC CGATTCACCA TCTCCAGAGA CAATTCCAAG | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGAGCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGAGGAT GGTTCGGGGA GTTATGGGAC TACTGGGGCC AGGGAACCCT GGTC       | 294 |

## (2) INFORMATION FOR SEQ ID NO:403:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 297 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:403:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GCAGCTATGC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAG TGGGTGGCAG TTATATCATA TGATGGAAGC | 120 |
| AATAAATACT ACGCAGACTC CGTGAAGGGC CGATTCACCA TCTCCAGAGA CAATTCCAAG | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG GGAGCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGAGAGA GTCTCTTAAC TGGGGACTTT GACTACTGGG GCCAGGGAAC CCTGGTC    | 297 |

## (2) INFORMATION FOR SEQ ID NO:404:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 312 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:404:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAG TGGGTGGCAG TTATATCATA TGATGGAAGC | 120 |
| AATAAATACA ACGCAGACTC CGTGAAGGGT CGATTCACCA TCTCCAGAGA CAACTCCAAG | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGAGCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGAGGGT ACGATATTTT GACTGGTTAT TATGACCCGC TCTTTGACAA CTGGGGCCAG | 300 |
| GGAACCCTGG TC                                                     | 312 |

## (2) INFORMATION FOR SEQ ID NO:405:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 312 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:405:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATAC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAG TGGGTGGCAG TTATATCATA TGATGGAAGC | 120 |
| AATAAATACT ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGAGCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGAGGGT ACGATATTTT GACTGGTTAT TATGACCCGC TCTTTGACAA CTGGGGCCAG | 300 |
| GGAACCCTGG TC                                                     | 312 |

(2) INFORMATION FOR SEQ ID NO:406:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 312 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:406:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAG TGGGTGGCAG TTATATCATA TGATGGAAGC | 120 |
| AATAAATACT ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAGTTCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGAGCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGAGATC AGGCGGCGTA TAGTGGCTAC GGGTCGGGGG GTATGGACGT CTGGGGCCAA | 300 |
| GGGACCACGG TC                                                     | 312 |

(2) INFORMATION FOR SEQ ID NO:407:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 312 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:407:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATAC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAG TGGGTGGCAG TTATATCATA TGATGGAAGC | 120 |
| AATAAATACT ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGAGCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGCCATT ACTATGGTTC GGGGAGTTAT AGCTACTACG GTATGGACGT CTGGGGCCAA | 300 |
| GGGACCACGG TC                                                     | 312 |

## (2) INFORMATION FOR SEQ ID NO:408:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 312 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:408:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATAC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGGG TGGGTGGCAG TTATATCATA TGATGGAAGC | 120 |
| AATAAATACT ACGCAGACTC CGTGAAGGGC CGATTACCA TCTCCAGAGA CAATTCCAAG  | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGAGCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGCCATT ACTATGGTTC GGGGAGTTAT AGCTACTACG GTATGGACGT CTGGGGCCAA | 300 |
| GGGACCACGG TC                                                     | 312 |

## (2) INFORMATION FOR SEQ ID NO:409:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 306 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:409:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG | 60  |
| GTCCGCCAGG CTCCAGGCAA GGGGCTGGAG TGGGTGGCAG TTATATTATA TGACGAAAGC | 120 |
| AATAAATATT ACGCAGACTC CGTGAAGGGC CGAATCACCA TCTCCAGAGA CAATTCCAAG | 180 |
| AACACGCTGT ATCTGCAAAT GAACAGCCTG AGAGCTGAGG ACACGGCTGT GTATTACTGT | 240 |
| GCGAGAGAGG GGACTACGTA CTAATACTAC TACGGTATGG ACGTCTGGGG CCAAGGGACC | 300 |



ACGGTC

306

## (2) INFORMATION FOR SEQ ID NO:410:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 246 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:410:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCGGTGAAGG TCTCCTGCAA GGCTTCTGGA GGCACCTTCA GCAGCTATGC TATCAGCTGG | 60  |
| GTGCGACAGG CCCCTGGACA AGGGCTTGAG TGGATGGGAA GGATCATCCC TATCCTTGGT | 120 |
| ATAGCAAAC TACGCACAGAA GTTCCAGGGC AGAGTCACGA TTACCGCGGA CAAATCCACG | 180 |
| AGCACAGCCT ACATGGAGCT GAGCAGCCTG AGATCTGAGG ACACGGCCGT GTATTACTGT | 240 |
| GCGAGA                                                            | 246 |

## (2) INFORMATION FOR SEQ ID NO:411:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 300 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:411:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| TCGGTGAAGG TCTCCTGCAA GGCTTCTGGA GGCACCTTCA GCACCTATGC TATCACCTGG | 60  |
| GTGCGACAGG CCCCTGGACA AGGGCTTGAG TGGATGGGAA AGATCATCCC TATCTTTGGT | 120 |
| ATAGCAAAC TACGCACAGAA GTTCCAGGGC AGAGTCACGA TTACCGCGGA CAAATCCACG | 180 |
| AGCACAGCCT ACATGGAGCT GACCAGCCTG AGATCTGAGG ACACGGCCGT GTATTACTGT | 240 |
| GCGAGAGACG AGACTGGGGA TCTCGGTGCT TTTGATATCT GGGGCCAAGG GACAATGGTC | 300 |

## (2) INFORMATION FOR SEQ ID NO:412:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 243 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:412:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ACCCTGTCCC TCACCTGCGC TGTCTATGGT GGGTCCTTCA GTGGTTACTA CTGGAGCTGG | 60  |
| ATCCGCCAGC CCCCAGGGAA GGGGCTGGAG TGGATTGGGG AAATCAATCA TAGTGGAAGC | 120 |
| ACCAACTACA ACCCGTCCCT CAAGAGTCGA GTCACCATAT CAGTAGACAC GTCCAAGAAC | 180 |
| CAGTTCTCCC TGAAGCTGAG CTCTGTGACC GCCGCGGACA CGGCTGTGTA TTACTGTGCG | 240 |
| AGA                                                               | 243 |

## (2) INFORMATION FOR SEQ ID NO:413:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 282 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:413:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ACCCTGTCCC TCACCTGCGC TGTCTATGGT GGGTCCTTCA GTGGTTACTA CTGGAGCTGG | 60  |
| ATCCGCCAGC CCCCAGGGAA GGGGCTGGAG TGGATTGGGG AAATCAATCA TAGTGGAAGC | 120 |
| ACCAACTACA ACCCGTCCCT CAAGAGTCGA GTCACCATAT CAGTAGACAC GTCCAAGAAC | 180 |
| CAGTTCTCCC TGAAGCTGAG CTCTGTGACC GCCGCGGACA CGGCTGTGTA TTACTGTGCG | 240 |
| AGGAACTTAT TTTTGTACTA CTGGGGCCAG GGAACCCTGG TC                    | 282 |

## (2) INFORMATION FOR SEQ ID NO:414:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 285 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:414:

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ACCCTGTCCC TCACCTGCGC TGTCTATGGT GGGTCCTTCA GTGGTTACTA CTGGAGCTGG | 60  |
| ATCCGCCAGC CCCCAGGGAA GGGGCTGGAG TGGATTGGGG AAATCAATCA TAGTGGAAGC | 120 |
| ACCAACTACA ACCCGTCCCT CAAGAGTCGA GTCACCATAT CAGTAGACAC GTCCAAGAAC | 180 |
| CAGTTCTCCC TGAAGCTGAG CTCTGTGACC GCCGCGGACA CGGCTGTGTA TTACTGTGCG | 240 |
| AGGGCAGCTA ACTGGTTTGA CTACTGGGGC CAGGGAACCC TGGTC                 | 285 |

## (2) INFORMATION FOR SEQ ID NO:415:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 297 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:415:

```

ACCCTGTCCC TCACCTGCGC TGTCTATGGT GGGTCCTTCA GTGGTTACTA CTGGAGCTGG      60
ATCCGCCAGC CCCCAGGGAA GGGGCTGGAG TGGATTGGGG AAATCAATCA TAGTGGAAGC      120
ACCAACTACA ACCCGTCCCT CAAGAGTCGA GTCACCATAT CAGTAGACAC GTCCAAGAAC      180
CAGTTCTCCC TGAAGCTGAG CTCTGTGACC GCCGCGGACA CGGCTGTGTA TTA CTGTGCA      240
GAGAGTGAGG GATGGGGATG GGA CTACTTT GACTACTGGG GCCAGGGAAC CCTGGTC      297

```

## (2) INFORMATION FOR SEQ ID NO:416:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 3122 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:416:

```

AATTAGCGGC CGCTGTCGAC AAGCTTCGAA TTCAGTATCG ATGTGGTACC TGGATCCTCG      60
AGTGCGGCCG CAGTATGCAA AAAAAAGCCC GCTCATTAGG CGGGCTCTTG GCAGAACATA      120
TCCATCGCGT CCGCCATCTC CAGCAGCCGC ACGCGGCGCA TCTCGGGCAG CGTTGGGTCC      180
TGGCCACGGG TGCGCATGAT CGTGCTCCTG TCGTTGAGGA CCCGGCTAGG CTGGCGGGGT      240
TGCCTTACTG GTTAGCAGAA TGAATCACCG ATACGCGAGC GAACGTGAAG CGACTGCTGC      300
TGCAAAACGT CTGCGACCTG AGCAACAACA TGAATGGTCT TCGGTTTCCG TGTTTCGTAA      360
AGTCTGGAAA CGCGGAAGTC AGCGCCCTGC ACCATTATGT TCCGATCTG CATCGCAGGA      420
TGCTGCTGGC TACCCTGTGG AACACCTACA TCTGTATTAA CGAAGCGCTG GCATTGACCC      480
TGAGTGATTT TTCTCTGGTC CCGCCGCATC CATAACGCCA GTTGTTTACC CTCACAACGT      540
TCCAGTAACC GGCATGTTC ATCATCAGTA ACCCGTATCG TGAGCATCCT CTCTCGTTTC      600
ATCGGTATCA TTACCCCAT GAACAGAAAT TCCCCTTAC ACGGAGGCAT CAAGTGACCA      660

```

|                                                                   |      |
|-------------------------------------------------------------------|------|
| AACAGGAAAA AACCGCCCTT AACATGGCCC GCTTTATCAG AAGCCAGACA TTAACGCTTC | 720  |
| TGGAGAAACT CAACGAGCTG GACGCGGATG AACAGGCAGA CATCTGTGAA TCGCTTCACG | 780  |
| ACCACGCTGA TGAGCTTTAC CGCAGCTGCC TCGCGCGTTT CGGTGATGAC GGTGAAAACC | 840  |
| TCTGACACAT GCAGCTCCCG GAGACGGTCA CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA | 900  |
| GACAAGCCCG TCAGGGCGCG TCAGCGGGTG TTGGCGGGTG TCGGGGCGCA GCCATGACCC | 960  |
| AGTCACGTAG CGATAGCGGA GTGTATACTG GCTTAACTAT GCGGCATCAG AGCAGATTGT | 1020 |
| ACTGAGAGTG CACCATATGC GGTGTGAAAT ACCGCACAGA TCGTAAGGA GAAAATACCG  | 1080 |
| CATCAGGCGC TCTTCGCTT CCTCGCTCAC TGA CTCGCTG CGCTCGGTG TTCGGCTGCG  | 1140 |
| GCGAGCGGTA TCAGCTCACT CAAAGGCGGT AATACGGTTA TCCACAGAAT CAGGGGATAA | 1200 |
| CGCAGGAAAG AACATGTGAG CAAAAGGCCA GCAAAGGCC AGGAACCGTA AAAAGCCGC   | 1260 |
| GTTGCTGGCG TTTTCCATA GGCTCCGCCC CCCTGACGAG CATCACAAAA ATCGACGCTC  | 1320 |
| AAGTCAGAGG TGGCGAAACC CGACAGGACT ATAAAGATAC CAGGCGTTTC CCCCTGGAAG | 1380 |
| CTCCCTCGTG CGCTCTCCTG TTCCGACCCT GCCGCTTACC GGATACCTGT CCGCCTTTCT | 1440 |
| CCCTTCGGGA AGCGTGGCGC TTTCTCATAG CTCACGCTGT AGGTATCTCA GTTCGGTGTA | 1500 |
| GGTCGTTGCG TCCAAGCTGG GCTGTGTGCA CGAACCCCC GTTCAGCCCG ACCGCTGCGC  | 1560 |
| CTTATCCGGT AACTATCGTC TTGAGTCCAA CCCGGTAAGA CACGACTTAT CGCCACTGGC | 1620 |
| AGCAGCCAGG CGCGCCTTGG CCTAAGAGGC CACTGGTAAC AGGATTAGCA GAGCGAGGTA | 1680 |
| TGTAGGCGGT GCTACAGAGT TCTTGAAGTG GTGGCCTAAC TACGGCTACA CTAGAAGGAC | 1740 |
| AGTATTTGGT ATCTGCGCTC TGCTGAAGCC AGTTACCTTC GGAAAAAGAG TTGGTAGCTC | 1800 |
| TTGATCCGGC AAACAAACCA CCGCTGGTAG CGGTGGTTTT TTTGTTTGCA AGCAGCAGAT | 1860 |
| TACGCGCAGA AAAAAAGGAT CTCAAGAAGA TCCTTTGATC TTTTCTACGG GGTCTGACGC | 1920 |
| TCAGTGGAAC GAAAACCTAC GTTAAGGGAT TTTGGTCATG AGATTATCAA AAAGGATCTT | 1980 |
| CACCTAGATC CTTTTAAATT AAAAATGAAG TTTTAAATCA ATCTAAAGTA TATATGAGTA | 2040 |
| AACTTGGTCT GACAGTTACC AATGCTTAAT CAGTGAGGCA CCTATCTCAG CGATCTGTCT | 2100 |
| ATTTGTTCA TCCATAGTTG CTGACTCCC CGTCGTGTAG ATAACTACGA TACGGGAGGG   | 2160 |
| CTTACCATCT GGCCCCAGTG CTGCAATGAT ACCGCGAGAC CCACGCTCAC CGGCTCCAGA | 2220 |
| TTTATCAGCA ATAAACCAGC CAGCCGGAAG GGCCGAGCGC AGAAGTGGTC CTGCAACTTT | 2280 |
| ATCCGCCTCC ATCCAGTCTA TTAATTGTTG CCGGGAAGCT AGAGTAAGTA GTTCGCCAGT | 2340 |
| TAATAGTTTG CGCAACGTTG TTGCCATTGC TGCAGGCATC GTGGTGTAC GCTCGTCGTT  | 2400 |
| TGGTATGGCT TCATTAGCT CCGGTTCCCA ACGATCAAGG CGAGTTACAT GATCCCCCAT  | 2460 |
| GTTGTGCAAA AAAGCGGTTA GTCCTTCGG TCCTCCGATC GTTGTCAGAA GTAAGTTGGC  | 2520 |

|                                                                   |      |
|-------------------------------------------------------------------|------|
| CGCAGTGTTA TCACTCATGG TTATGGCAGC ACTGCATAAT TCTCTTACTG TCATGCCATC | 2580 |
| CGTAAGATGC TTTTCTGTGA CTGGTGAGTA CTCAACCAAG TCATTCTGAG AATAGTGTAT | 2640 |
| GCGGCGACCG AGTTGCTCTT GCCCGGCGTC AACACGGGAT AATACCGCGC CACATAGCAG | 2700 |
| AACTTTAAAA GTGCTCATCA TTGGAAAACG TTCTTCGGGG CGAAAACTCT CAAGGATCTT | 2760 |
| ACCGCTGTTG AGATCCAGTT CGATGTAACC CACTCGTGCA CCCAACTGAT CTTCAGCATC | 2820 |
| TTTTACTTTC ACCAGCGTTT CTGGGTGAGC AAAACAGGA AGGCAAAATG CCGCAAAAAA  | 2880 |
| GGGAATAAGG GCGACACGGA AATGTTGAAT ACTCATACTC TTCCTTTTTC AATATTATTG | 2940 |
| AAGCATTTAT CAGGGTTATT GTCTCATGAG CGGATACATA TTTGAATGTA TTTAGAAAAA | 3000 |
| TAAACAAATA GGGGTTCCGC GCACATTTC CCGAAAAGTG CCACCTGACG TCTAAGAAAC  | 3060 |
| CATTATTATC ATGACATTAA CCTATAAAAA TAGGCGTATC ACGAGGCCCT TTCGTCTTCA | 3120 |
| AG                                                                | 3122 |

(2) INFORMATION FOR SEQ ID NO:417:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:417:

Met Glu Ser Asp Ser

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